An Address

ON

THE CLINICAL IMPORTANCE OF THE SYMPATHETIC NERVOUS SYSTEM.*

BY

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THE knowledge we possess to-day of the finer anatomy and of the physiology of the nervous system has been attained only at the expense of years of controversy. If there is much land still to be possessed, that which is now our heritage has been systematically explored and surveyed till we would fain believe it is a country with familiar and unchanging landmarks. Yet this is far from being the case, and while it would be a simple matter to find illustrations of the truth of this statement from other sections of neurology, we need not look beyond the sympathetic nervous system, which forms the subject of my remarks to-day, for a demonstration that will serve our purpose.

During the greater part of last century the anatomy and physiology of the sympathetic system was a *Haupttummelplatz* of neurological discussion, and it was only with the magistral researches of Gaskell and of Langley that order took the place of confusion and experimental data of empiricism. These English physiologists laid a scientific foundation for the study of the question, which remains unshaken, and their terminology has been accepted by the schools of other countries. As junior students of physiology we become familiar with the complex lore of vaso-constrictors and vaso-dilators, and even now we may not have forgotten our quondam interest in the behaviour of the vessels of the rabbit's ear under varying experimental conditions; but as practitioners of medicine it may be questioned whether we concern ourselves much with the application of our hardly-gained knowledge to the common clinical phenomena of disease that must daily obtrude themselves upon us. A little thought will convince us that disturbances in the realm of the sympathetic nervous system are probably more frequent than any other class of morbid symptom, and even a slight acquaintance with their interpretation would stand us in good stead.

But our knowledge of the functions of the sympathetic system has been notably modified and enlarged by recent discoveries of importance. Advances that have been made in regard to the nature and physiology of the ductless glands have thrown a flood of light on the former, and this we cannot afford to ignore. We are compelled to regard the sympathetic nervous system from a fresh viewpoint: the main principles of its action must be restated, and it is no exaggeration to say the gain thereby to clinical medicine is bound to be far-reaching. This is one of the aspects of the question to which special attention will be directed.

Before entering on it, however, I may be allowed to remind you of the salient features of the sympathetic system, as established by the work of Langley and various other investigators.

ANATOMICAL AND PHYSIOLOGICAL CONSIDERATIONS.

The sympathetic system, embryologically, is directly derived from the cerebro-spinal nervous system. As early as the sixth week of fetal existence the general development of the sympathetic system is complete, in the sense that its essential features can be traced even at that stage. It may be said very briefly that the ganglion cells of the sympathetic issue from the mass of nerve elements forming the neural crest, that they migrate thence at differing times and rates, those of the thoracic region always being in advance of the cranial and lumbo-sacral regions, and that on reaching their approximate final positions they proliferate and clump themselves into ganglion formations. The processes of the cells elongate into fibrillae and so a communicating network of fibres is produced, extending centrally to the cerebro-spinal system and peripherally to viscera. A number of sympathetic cells are left behind, however, in the cerebro-spinal axis, and later we shall see how the central connexions of the sympathetic will serve to explain the appearance of sympathetic phenomena in central lesions.

When full development is attained, the sympathetic system is found to consist of two divisions. The first is the sympathetic system proper, often called the vertebral sympathetic, consisting of the chain of ganglia of the cervical, dorsal, and lumbar regions. The cervical set is collected into three sympathetic ganglia, but in the case of the thoracic and lumbar there is a ganglion corresponding to each segment of the spinal cord. These ganglia are connected, on the one hand, with the spinal cord at their own levels, except that the central connexions of the cervical ganglia arise, not from the cervical cord, but by the first and second dorsal roots; and, on the other hand, from these ganglia fibres pass peripherally, as a rule through the medium of secondarily formed plexuses or ganglia, to all the viscera of the thoracic and abdominal cavities, to the vascular system, to the skin with its glands and other appendages, and to the pelvic viscera and genitalia.

The second division of the sympathetic is known as the parasympathetic, or, preferably, the autonomic system. At the cranial and caudal extremities of the cerebro-spinal axis are situated three sympathetic centres, two at the former and one at the latter. These centres are in the cerebro-spinal system, and from them sympathetic fibres pass out, again through the medium of intercalated ganglia, to all the viscera of the body, and to all the structures enumerated above as supplied by the vertebral sympathetic. In the case of the autonomic system there is only one set of ganglia, and they are to be found, as a rule, in the immediate vicinity of, or actually in, the organs innervated, whereas the vertebral sympathetic system, as has been said, possesses two sets—one the vertebral chain, and the other the plexuses, coeliac, splanchnic, and so on. In the case of the cervical sympathetic, however, there is only one set of ganglia on the path to the structures innervated by it.

The sympathetic nervous system, therefore, presents this remarkable feature—that it gives a double nerve supply to the skin and its appendages, the glands, vascular system, the alimentary system from mouth to rectum, and the respiratory system, and the importance of this fact will be the more appreciated when it is stated that there is much evidence forthcoming to show that the two divisions—the vertebral sympathetic and the autonomic—are mutually antagonistic in their function, as we shall see subsequently.

Let us look at the sympathetic and autonomic supply a little more closely. It should be premised that not all of the anatomical details about to be mentioned have been satisfactorily established, and there is difference of opinion on some not unimportant points. As far as is agreed on at present, it may be said that the arrangements are as follows:

The autonomic system has three centres, the mesencephalic, the bulbar, and the sacral, or lumbo-sacral. From the first of these pass autonomic fibres by the oculo-motor nerve and ciliary ganglion to the sphincter iridis, constricting the pupil in their action. The corresponding vertebral sympathetic supply, antagonistic in its function, is constituted by pupil-dilating fibres from the cervical sympathetic in the neck, reaching the eye by a circuitous route viâ the carotid plexus and the superior division of the fifth or trigeminal nerve.

The bulbar autonomic centre is formed by sympathetic cells in relation to the facial, glosso-pharyngeal, and vagus nerves. Connected with the first two of these are the fibres passing out to supply mucous and salivary glands, the blood vessels of the mucous membranes of mouth and nose, the lacrymal glands, and so on. These are antagonized by vertebral sympathetic fibres running in the cervical sympathetic and reaching the same distribution by the elaborate route already described. We may not have forgotten the differences between the autonomic "chorda saliva" and the "sympathetic saliva" of our student days. In the autonomic facial fibres, probably, are vaso-constrictors to vessels and sweat glands, in the cervical sympathetic are vaso-dilators, and so on. But I shall not particularize further, lest we should be unable to see the wood for the trees.

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The vagus centre, however, deserves our attention because of its great clinical importance. There is reason to believe it is the dorsal nucleus of the vagus which forms the autonomic vagal centre, but we need not delay over this vexed question. The vagus supply is extraordinarily wide. It furnishes sympathetic fibres, belonging of course to the autonomic system, to the heart and blood vessels generally, to the alimentary tract from mouth to colon, to the liver, pancreas and kidneys, to larynx, trachea, bronchi and lungs; its branches go both to smooth, non-striped muscle fibres in these various vessels and viscera, and to glandular organs therein contained. The autonomic vagal action is antagonized in all these—again it must be remarked that this is a generalization the truth of which has not as yet been established in every instance—by vertebral sympathetic fibres supplying the same structures and arriving viâ the visceral plexuses. Thus, to take the best known instance, there are cardio-inhibitory fibres in the vagus and accelerating fibres in the sympathetic. Again, the vagus contracts and the vertebral sympathetic dilates the coronary vessels. The sympathetic contains the constrictors for the blood vessels, the vagus the dilators, if there are such. In the sympathetic are the fibres for the sweat glands of the body, probably stimulating and not inhibiting fibres. The sympathetic fibres relax the smooth muscle fibres of oesophagus, cardiac sphincter, and stomach; the vagal fibres contract them. The latter contract the gall bladder; the former relax it. And so on.

Finally, in the lumbo-sacral part of the spinal cord is the third autonomic centre, from which fibres pass to the vessels of the rectum, anus, and external genitalia—vaso-dilator in function. The vaso-constrictors to the same are in the vertebral sympathetic system. Again, the sacral autonomic supplies the muscles of the colon, rectum, anus, urethra, bladder, and external genitalia, being chiefly concerned with contraction, while the corresponding sympathetic fibres are chiefly concerned with relaxation.

The Central Connexions of the Sympathetic.

A further anatomical matter that ought not to be passed over is the question of the central connexions of the sympathetic. It has been shown that the vertebral sympathetic system is an outgrowth from the cerebro-spinal. The efferent fibres joining the two arise from a definite tract running the length of the spinal cord from the lowermost cervical region to the lumbar. This is known as the intermedio-lateral tract, and it is composed of cells, readily distinguishable from those of the anterior and posterior horns, which are situated at the lateral extremity of the grey matter, where anterior and posterior horns meet. The nerve cells of this tract rise and fall in number in a more or less regular way for each segment of the cord. From them pass out efferent sympathetic fibres to join the chain of sympathetic ganglia, travelling by the anterior roots, and leaving the latter by the white rami communicantes immediately after the formation of the mixed nerve.

Now, it is inconceivable that the spinal sympathetic tracts should have no connexion with higher centres, and although it has been doubted whether there can be cerebral centres for the functioning of vasomotor nerves, sweat glands, the alimentary tract, and so on, we do know as a matter of fact that the spinal tracts already referred to are in association with bulbar sympathetic centres—not the autonomic bulbar centre of which we have been speaking—whose existence has been demonstrated in a conclusive fashion. And why should the system not be represented in the cerebrum itself? We may admit that the sympathetic system is very little under the influence of the will, but it is notably under the influence of moods and emotions. Anger, fear, shame express themselves outwardly by obvious sympathetic disturbances—by pallor, blushing, perspiration, dryness of mucous membranes—to mention but a few of the symptoms which will occur to every one; and if we believe, as there is evidence to show we should believe, that the emotions are placed at least as high as the basal ganglia, then the bulbar sympathetic centres must be represented anatomically still further cerebralwards. I shall refer to clinical cases which appear to bear this out a little later.

The sympathetic system further resembles the cerebro-spinal system in that it possesses afferent—that is, sensory—as well as motor, or efferent, connexions with the latter. There is excellent evidence forthcoming to prove that the viscera have a sensibility of their own, impulses underlying the appreciation of which are conveyed by afferent sympathetic fibres leaving the sympathetic chain and passing by the posterior roots to the spinal cord like any of the other sensory impulses. Normally we are quite unconscious of the functional activity of our organs, and this no doubt suggests that sympathetic afferent sensory impulses do not reach the brain and become conscious, or, rather, so that we become conscious of them. At the same time, we do well not to negative the possibility of such an occurrence.

It is of course well known, as I may venture to remind you, that in certain diseased states of viscera sensory impulses from them reaching the cord are ultimately interpreted by our consciousness as proceeding from the area of skin supplied by the ordinary spinal nerves running into the same segments of the cord as are reached by the abnormal sympathetic afferent impulses. Thus in angina pectoris the patient may have paraesthesiae apparently in the distribution over the skin of the inside of the left arm and hand. In gastric ulcer he may have hyperaesthesia over the skin of the upper abdomen on the left. Other instances will at once suggest themselves. These zones of referred pain have been carefully worked out by Head and others, and they are of localizing value. But that there is a possibility of actual sympathetic sensory impulses reaching consciousness in certain diseased states seems to me the only satisfactory explanation of some of the symptoms of neurasthenia and also of hysteria.

From what has been said it will appear that the sympathetic system is at once dependent on, and independent of, the cerebro-spinal system. Owing to the central connexions which the former possesses, there may develop obvious sympathetic symptoms in organic and functional disease of brain, spinal cord, or peripheral nerves. What of its possible independence?

We have seen that a very large part indeed of our somatic structure, our circulatory system, respiratory system, alimentary system, genito-urinary system, the skin, mucous membranes, glands, and so on, are as it were slung between the nerve supply of the autonomic system on the one side and the sympathetic on the other, and that these are mutually antagonistic. It may be concluded that the result is the constant maintenance of tone in these organs, a tone which is constantly varying, but which is not constituted by alternating periods of rest and unrest. There is always activity in function. Is it possible that sympathetic ganglia have an autonomous activity of their own, and that there is a peripheral independence in them not possessed by any of the organs reached by the cerebro-spinal system? It would appear to be not merely possible, but probable. There are short reflex arcs in certain hollow viscera the physiological activity of which appears to be independent of central connexions. The movements of the ureters, peristaltic action of the intestine, and the mechanism of the heart-beat, are illustrations in point. And while, as far as I know, a wider application of the principle has not been made, it seems possible that not a few of the phenomena seen in vasomotor neuroses, to take but one example, may be due to increase or decrease of peripheral sympathetic activity produced by morbid agents whose action is quite independent of the central representations of the sympathetic system.

Sympathetic Symptom-complexes.

Enough has been said to support my original contention, that disturbances in the realm of the sympathetic nervous system as a class of morbid symptom must confront us almost daily, and I should like now to sketch a few of the symptom-complexes, the significance of which can be understood at once by reference to the anatomical and physiological data we have been considering.

First of all, we shall look at the occurrence of obvious sympathetic symptoms in central cerebral lesions.

Reference has already been made to the familiar symptomatology of the expression of the emotions. Under the influence of an emotion we turn pale, we blush, we perspire, we shiver or shudder; under the influence of emotion the throat and buccal membranes of the public speaker become dry. Under emotion we experience a

"thrill" all over our body; our cheeks "tingle." All these clearly are somatic phenomena produced through the sympathetic system; the last is the pilomotor reflex, known no doubt to many of my audience.

Now it seems reasonable, if not indeed essential, to suppose that if these generalized somatic symptoms are produced, as they clearly are produced, through the agency of the autonomic and sympathetic system, then the vagus centre and the bulbar sympathetic centre must be capable of being acted on from higher levels. For the stimuli evoking the emotion pass in to the brain centres by such sense avenues as the visual or the auditory path, and the lowest point at which such sensory impulses could pass over from the afferent to the efferent side is in the mid-brain, which is definitely above the bulbar level of which we have been speaking. There must, therefore, be a higher representation of the sympathetic centres than the medulla, and there is evidence to show that this representation is at least as high as the basal ganglia, the optic thalamus and corpus striatum. I have seen an ordinary case of left hemiplegia of capsular origin in which there was a permanent "goose-skin" on the affected side of the body. I have seen another case of hemiplegia in which the affected limbs were the seat of a vasomotor paresis with oedema, and such cases are not really very uncommon. They are often met with in infantile cerebral hemiplegia. In such instances the lesion is certainly not lower than the pons, and is probably higher. It is patent, therefore, that both the autonomic and the vertebral sympathetic systems are centrally represented, and though this has been denied by one or two investigators it is difficult to set aside the evidence which has accumulated.

We are on surer ground when we come to the bulbar sympathetic centres, the centres in the medulla oblongata. We may take the autonomic vagal centre first.

There is a definite symptom-complex associated with disturbance of the vagal centre to which it is well to direct special attention. The condition clinically is known to our American friends as a "nerve storm," and the description is not inapt. It is known also as pseudo-angina, cardiac neurasthenia, and under other designations, but the term which Sir William Gowers proposed, and which I much prefer to use, is "vaso-vagal attack." The attacks are usually periodic, often resembling epilepsy in their periodicity, and it is quite possible that in some instances, at least, they are of the nature of epileptiform discharges in these lower centres. Commencing as a rule with an epigastric aura, the attack rapidly develops into palpitation, forcible or racing cardiac action, sometimes almost cessation of the same, suffocation, and difficulty in respiration; with this the patient usually experiences an indescribably distressing feeling of impending death, or of impending misery of some sort; at the same time the extremities are as though of marble in their icy coldness, then to this may succeed clammy perspiration or burning flushes all over, and at the same time there is often trembling and quivering of the musculature. The attack may last a few minutes, or it may be drawn out over hours. It may be complete, after the description just given, or it may be very partial and incomplete. In either form the condition is far indeed from uncommon, and I have personally seen many instances of it. It is self-evident, I think, after what we have learnt, that the whole vaso-vagal attack is a pure symptom-complex of a functional disturbance in the vagal autonomic centre, and as such it ought to be known. Nothing is more desirable, more imperatively called for, than to pick such attacks out of the rubbish heap of neurasthenia, with which they are constantly confounded, for the treatment of the two entities differs widely. Of course such an attack may occur as an episodic syndrome in the course of another disease, as can be well understood, but in its pure and uncomplicated form it is frequently met with, even in young people, and has scarcely received the attention it deserves. Its treatment with nitro-glycerine, in any form, but especially the liquor trinitrini, is often strikingly successful.

Apart from the vagal autonomic centre in the medulla there is a sympathetic centre in its neighbourhood—almost certainly in the substantia reticularis—which is a bulbar representation of the vertebral sympathetic system, and anatomically in continuity with it, or at least with the cervical part of it. As a result of a lesion involving this part of the medulla, an interesting series of sympathetic symptoms may develop of central origin. The region concerned is in the distribution of the posterior inferior cerebellar artery, which I may remind you is a branch of the vertebral and winds round the side of the medulla on its way to the cerebellum via the inferior cerebellar peduncle. As it winds round it sends in small terminal branches to the medulla, which penetrate its substance, and if the vessel is occluded from thrombosis—a not infrequent lesion—the area of the medulla supplied often suffers from ischaemia, and among the characteristic symptoms of this complex is paralysis of the cervical sympathetic nerve and loss of sweating on the face on one side.

When we come to the spinal cord, one of the common clinical pictures is that of irritation or of paralysis of the cervical sympathetic nerve, which arises from Budge's centre in the lateral horn of grey matter of the first and second dorsal segments, mainly, and passes out to follow that circuitous route in the neck and head to which reference has already been made. We have seen that there must be a continuation cerebralwards of this centre, for identically the same symptoms can be produced by a lesion of the posterior inferior cerebellar artery, as far as the cervical sympathetic is concerned, as by a lesion of the upper dorsal cord, or a lesion of the nerve trunk itself. The localizing value of paralysis of the cervical sympathetic is often precious. It reveals itself by a very clear-cut syndrome, consisting in ptosis, myosis, and enophthalmos, with or without vasomotor and sweat disturbances over the face and upper part of the trunk. A rare concomitant of cervical sympathetic palsy, which, however, has come under my notice at least three times, is heterochromia iridis, a pigmentary change taking place in the iris on the affected side. Stimulation or irritation of the cervical sympathetic naturally produces an opposite effect—namely, exophthalmos, widening of the palpebral aperture, and mydriasis. Sometimes almost the only sign of a commencing palsy from defect of this nerve path is failure of the pupil to dilate to shade. It is well worth remembering, also, that cocaine may be used as a test of the integrity of the cervical sympathetic; a drop instilled into the eye will cause the pupil to dilate only if the nerve be normal; atropin or homatropin is of no value in this connexion.

Many organic lesions of the spinal cord are accompanied by obvious vasomotor and trophic changes, which are to be regarded as due to implication of the intermedio-lateral tract. In compression paraplegia from whatever cause arising it is often possible to detect the level of the compression by the simple device of injecting pilocarpin, a sixth of a grain, and observing, adequate precautions having been taken to protect the skin surfaces with a cradle, whether the drug has failed to produce sweating in the lower limbs and up to a given level on the trunk. A valuable case of poliomyelitis has been recorded where after the onset there was complete anidrosis of the lower limbs, and at the necropsy a haemorrhage was found in each intermedio-lateral tract. The vasomotor symptoms that often accompany transverse myelitis, spinal tumour, and other spinal cord conditions that need not further be specified, find a ready explanation in involvement of the important intermedio-lateral tracts.

The symptomatology of organic disease of the thoracic and abdominal sympathetic system, outside of the cord, is not at all well known, and yet evidence is steadily accumulating which will help us some day to differentiate more clearly between the various ganglia and plexuses than we can at present. Of course, it is recognized that many of the familiar visceral crises of tabes are occasioned by organic disease of the sympathetic plexuses supplying the viscera in question. Again, the abdominal symptoms of lead colic may be the result of irritation of the solar plexus. A syndrome of the solar plexus has been described, consisting in hyperaemia of the abdominal viscera, vomiting, diarrhoea, oliguria, and general loss of strength. Certain forms of visceral neuralgia, to which attention has again been drawn recently, may be associated with affections of the coeliac plexus. The relation of mucous colitis, of many of the symptoms of acute peritonitis, of certain forms of angina pectoris, and certain acute pulmonary conditions—to mention but a few—to disease of the thoracic and abdominal sympathetic

plexuses is a chapter of clinical pathology that has yet to be written.

The Pharmacological Aspect of the Sympathetic System; Relation to Ductless Glands.

We must leave this part of our subject, however, only the fringe of which has been touched, to pass on to a view of the whole question which is eminently calculated, with the aid of further research, to lead to most fertile results. I refer to what may be called the "pharmacological" aspect of the sympathetic system, and the relation of the function of the latter to the function of the ductless gland system.

To appreciate this new standpoint we must begin by alluding to what is now called the chromaphil or chromaffin system of gland cells. It has long been recognized that the cortex of the suprarenal gland is distinct from the medulla of the same. The medulla is constituted by cells which possess this peculiarity, that they stain deeply when soaked in the salts of chromic acid—for example, potassium bichromate—becoming a rich brown colour. So characteristic is this reaction that such cells can readily be picked out in this fashion whatever be their situation; hence the expression chromaffin, or better chromaphil, to signify them. Now these chromaphil cells are found in many other places beside the medulla of the suprarenals. From the embryological standpoint they are known to originate in the same situation or *Anlage* as the cells which eventually reach and form the sympathetic chain of ganglia. In fact, we may speak of sympatho-chromaphil tissue. In every ganglion of the chain, then, on each side, and mostly lying in depressions on the dorsal portions of these ganglia, are rounded masses of chromaphil tissue, of exactly the same nature as the medulla of the suprarenal. Further, there is an unpaired strand of this tissue lying on the front of the abdominal aorta, and known as the aortic body or paraganglion of Kohn. Then they are found not merely in the sympathetic ganglia, but as a constant occurrence in many of the sympathetic plexuses, and they have been traced in the kidney, ureter, accessory suprarenals, prostate, ovary and epididymis, and in the carotid bodies. In the chromaphil system, therefore, we have a widespread tissue, intimately allied to the sympathetic system in origin and localization, which not only presents the histological peculiarities already specified, but is endowed with equally important physiological properties. Chromaphil tissue secretes a substance which has a definite and characteristic action on non-striped muscle fibres—in other words, on structures which are innervated by the sympathetic system.

No modern drug is more familiar to the physician than adrenalin. The important point about it is that adrenalin, which is the product of the secretion of the suprarenal medulla—that is, is derived from the sympatho-chromaphil system—acts solely on tissues innervated by the sympathetic. This is a striking fact. What are the effects of injection of adrenalin, or preferably "adrenin," since adrenalin has commercial associations? It causes a rise of blood pressure; it dilates the pupil; it contracts the muscles of the hairs; it excites the salivary and lacrymal glands, the liver, the muscular tissue of the uterus and vagina, of the vas deferens, the vesiculae seminales, the dartos muscle, and the muscular coat of the stomach. In no case does extract of adrenal correspond in its effect to what is produced by stimulation of cranial or sacral autonomic nerves; on the other hand, its effects are such as are produced by stimulation of some one or other sympathetic nerve.

There is, therefore, normally present in the body a secreting system which is normally producing a secretion with a definite pharmacological action on sympathetically-innervated tissue, and this tissue is thereby kept in a normal state of tone. If the secretion is defective, there is loss of sympathetic tone; if it is excessive, there is a pathological increase in sympathetic tone. In fact, our German *confrères* are already speaking of sympathicotonus and vagotonus, although, so far as I am aware, the expressions are not as yet employed in this country. Further, they speak of "adrenalin sensibility" and are using injections of adrenalin as a test for the functioning of the sympathetic system. The clinical and therapeutic importance of these facts must be at once apparent to us.

The question arises as to how adrenin acts, whether on sympathetic centres or on sympathetic end-mechanisms. It has been shown that it acts mainly on end-mechanisms, and that, further, there are substances which are antagonistic in their action to adrenin. For instance, adrenin has no special action for the autonomous system, as has already been pointed out. The autonomous system, however, is stimulated by cholin and analogous poisons and paralysed by atropin. The sympathetic system is indifferent both to cholin and atropin. It would appear, therefore, that in the body are normally found certain "poisons"—for example, cholin and adrenin—which have autonomous-exciting and sympathetic-exciting actions respectively, which are mutually antagonistic and can compensate one another.

But the matter does not end here. We know that other internally secreting glands are controlled by the same system—to mention only one, the thyroid. The thyroid is supplied with vaso-constrictor and vaso-dilator nerves; on these, whichever is the sympathetic group (for there are differences of opinion on this matter), the internal secretion of the chromaphil system, it may be assumed, has a stimulating action. Again, between the suprarenals and the pancreas there is undoubtedly a very intimate relation. It has been shown, for instance, that neither puncture diabetes nor pancreatic diabetes can occur after removal of the suprarenal bodies. It has been shown, further, that in pancreatic diabetes adrenalin dropped on the conjunctiva will dilate the pupil, whereas it will not dilate it in this way in the normal eye, although these experiments require confirmation.

It is undesirable, however, though it would be easy, to amplify these interesting and difficult topics. I may recapitulate in a sentence and say that a substance normally secreted by the adrenal medulla passes into the general circulation and maintains the tone of all sympathetically-innervated tissue, including other ductless glands. The cells which secrete this substance are embryologically of sympathetic origin. Other substances are produced in the organism which have an antagonizing, neutralizing, or compensating effect when compared with that of the adrenal secretion, and they act rather on the autonomous system. Similarly, many commonly employed therapeutic agents have an action on one or other of these groups. Cocaine, atropine, caffeine, stimulate the sympathetic system and inhibit the autonomic system. Morphine, chloral, antipyrin inhibit the sympathetic system and stimulate the autonomic system.

Application of Physiological Findings to Clinical Medicine.

The linking up of the sympathetic system and the ductless gland system is already proving to be a most important generalization in clinical medicine, and with increasing knowledge this importance will assuredly be intensified. There is a large group of diseases known as the angio-neuroses, included in which category are such conditions as Raynaud's disease in mild or severe variety, local pallor or "dead finger," local asphyxia, symmetrical gangrene, acroparaesthesia, sclerodermia, angioneurotic oedema, and so on—diseases obviously associated with disturbances of the sympathetic innervation of the vascular system. Now the frequency with which affections of one or other of the ductless glands are noted in such cases is remarkable. Disease of the thyroid is practically constant in sclerodermia. Myxoedematous patients constantly complain of feeling cold, and exhibit a malar flush; they often complain of acroparaesthesia. In Graves's disease vasomotor irritability is a cardinal feature. In fact vasomotor neuroses and disturbance of functions of other sympathetically-innervated tissue is an association that is no more than might be expected in view of what has been already said.

Again, many of the common symptoms of neurasthenia and hysteria are patently of sympathetic origin. Who of us has not seen the typical irregular red blotches appear on the skin of the neck and face as the neurasthenic subject "works himself up into a state"? The clammy hand, flushed or pallid features, dilated pupils, the innumerable paraesthesiae, the unwonted sensations in head or body, are surely of sympathetic parentage. In not a few cases of neurasthenia symptoms of this class are the chief or only manifestation of the disease. Here, then, is a condition of defective sympathicotonus; may it not have

much to do with impairment of function of the chromaphil system? Addison's disease, for all its continued obscurity, may be regarded as at least to a great extent attributable to disease of the suprarenals. One of its characteristic features is asthenia, which is sometimes profound. And there does not appear to me any tenable distinction between the asthenia of Addison's disease and the asthenia of neurasthenia. Cases of the former are not infrequently diagnosed as ordinary neurasthenia at first. It is difficult to avoid the conclusion that defect of glandular function is responsible for much in the clinical picture of neurasthenia.

In the familiar symptoms of the climacteric how prominent are those which are derived from the sympathetic system. Palpitation, noises in the ears, "rush of blood to the head," hot and cold feelings, mist before the eyes, sweating, trembling, paraesthesiae of all sorts, sinking feelings, vertigo—who does not know the whole gamut of climacteric symptomatology? Analysis indicates at once the sympathetic origin of practically all of it, but why should this branch of the nervous system be disturbed? The answer is ready to hand. At the climacteric a physiological involution of glandular activity occurs, ovarian function alters, and thereby the function of other glands is thrown out of gear. Sympathetic tone is dependent on adrenal support, and until the glandular equilibrium is once more attained sympathetic symptoms are likely to occur. Let it not be supposed that the male sex is free from such glandular upset. The age of 63 was regarded by those of another generation as the crucial year for the male; but it is not necessary to postulate an actual climacteric—it suffices that the physician should be able to interpret the symptoms complained of in the light of what has been said.

The protean phenomena of hysteria can in many instances be readily explained by reference to sympathetic function. Not only are vasomotor symptoms of very common occurrence in that disease, but a vasomotor theory has even been advanced to account for the whole symptomatology. It is impossible, obviously, to subscribe to such a view; at the same time the tendency to-day is to ignore the somatic symptoms of the disease, especially those of vasomotor origin—a tendency which should, in my opinion, be discountenanced. In hysterical paraplegia one often finds a vasomotor paresis; in hysterical anaesthesia failure to draw blood on pricking the skin is as easy to demonstrate to-day as it was 300 years ago. The results of such a failure, however, are not quite so serious from the patient's point of view as they were in the "good old days." In some cases of hysteria multiple cutaneous gangrene, so-called, is known to occur, and I have seen a case where the diagnosis of a somewhat similar skin condition was attended with the greatest difficulty. Dermatographia or urticaria scripta, no doubt, occurs as a more or less isolated phenomenon, yet in hysteria, above all other conditions, it is seen in marked degree.

The pathogenesis of the sympathetic impairment in hysteria is not easily elucidated. This is not the time to venture even on a brief attempt to sketch an adequate theory of hysteria, but I may remark that the occurrence of unmistakable sympathetic symptoms in that disease argues for the central representation of the sympathetic system, and the central control, in certain not yet clear conditions, of the ramifications of that system in viscera and blood vessels.

Many more conditions might be referred to in this connexion. I have said nothing of asthma, of migraine, even of transient symptoms which can scarcely be said to constitute a disease, such as blushing, local sweating, etc., although it may be remarked that in these and other morbid states of a like kind good results are being obtained by treatment on opotherapeutic lines. I have given only a brief account of some of the chief features of interest revealed by a study of the sympathetic system and its relations, but it may serve to show that the fresh light which is being thrown on sympathetic function by recent investigations exemplifies once more the mutual interdependence of scientific research and medical practice.

THE late Mr. Charles George Lee, Honorary Surgeon, Liverpool Eye and Ear Infirmary, left estate valued at £7,638.

VARIETIES AND TREATMENT OF CHOREA.*

BY

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CHOREA is insidious in its onset. The child who becomes the subject of chorea is usually nervous, excitable, and imaginative. She is easily frightened. At school, though by no means a dunce, she lacks concentration of thought and perseverance. Her attention wanders from the work to the creations of her active mind. It is easily diverted by all manner of extraneous and trivial circumstances.

Chorea begins as an accentuation of this psychical unrest. Before the actual movements appear the patient becomes more excitable, more irritable, more emotional, and less reliable. The distinction between when the mental state should be called choreic and when it should be regarded merely as evidence of a neurotic disposition is subtle. There are some who look on the many symptoms of nervous instability to which choreic children are liable as evidence of a rheumatic toxaemia, whilst others speak of chorea as especially prone to attack neurotic children. A compromise between these opinions is probably nearer the truth, for, if we accept the former view, we must acknowledge a persistent rheumatic toxaemia dating from very early life, whilst if we ignore it we shut our eyes to the very obvious psychical disturbances which a definite attack of chorea brings with it.

As evidence of the ill-balanced and hyper-excitable mental state is the frequent occurrence in the history of the same child of such functional errors as night terrors or day terrors, somnambulism, enuresis, nervous diarrhoea, and tic.

Long before the chorea is recognizable by its erratic movements the child's school work deteriorates. It becomes inaccurate, slovenly, and uneven. Perhaps this is best shown in writing and arithmetic. The letters and figures are badly formed, irregular and wavy, crowded in some places, spaced in others, and sloping at various angles. This falling off is readily detected by the teacher, who metes out punishment which he believes to be condign, but which is, of course, unmerited, and may precipitate symptoms of a more obvious form. The attack is then not unnaturally laid by the parents at the teacher's door.

Forms.

In almost every case, in addition to the erratic pseudo-purposive movements and the psychical changes, there are also some loss of power and some sign of cardiac affection. The loss of power is denoted by the characteristic crouching attitude when the child sits up, due to weakness of the back muscles and those which hold the head erect. The grip is feeble, and there is atony of the muscles and laxity of joints. The signs found by examination of the heart in many cases are merely those which may accompany functional disturbance—rapidity, a short, sharp, and rather slapping first sound, approximation of these sounds, and sometimes irregularity. A slight systolic murmur and slight dilatation may be present, and probably indicate a local rheumatic toxaemia or infection, especially if a mid-diastolic murmur or so-called reduplicated second sound are heard at the apex. In many cases signs of previous valvular disease are found.

The mental state when the chorea is readily recognizable is usually ill-balanced and the emotions are beyond control. It has been aptly likened to April weather, sunshine and shower alternating in quick succession. Tears flow as part of real distress for which there is no adequate reason or perhaps no reason at all.

Each of these four factors which contribute to the clinical picture of chorea—namely, erratic movements, psychical disturbance, weakness, and cardiac changes—may be exaggerated, so that it assumes the dominant part, and in this way four chief forms occur: (1) Motor, (2) maniacal, (3) paralytic, (4) cardiac, to which two other forms may be added, (5) latent, and (6) residual.

In the *motor* form the movements take the chief place,

* Based on a lecture delivered at the Hospital for Sick Children, Great Ormond Street.

and may be so severe that the child is unable to sleep or feed, and is in danger of death from exhaustion.

In the *maniacal* form the child is seriously ill and has all the appearance of one suffering from severe toxaemia. The temperature, which is usually only slightly raised in chorea, may in this form reach 103° or higher, and often remits from 102° to 99°. Sores are present on the lips, the tongue is coated, dry, and sometimes fissured. Hallucinations are not uncommon and the patient exhibits a considerable degree of mental distress, crying and moaning in bouts and howling in a manner reminiscent of a caged animal. A feature of these cases, which so far as I know has not attracted attention, is a dry, harsh, scaly skin, especially of the hands, which are often sore and cracked. The prognosis is usually favourable in spite of the alarming nature of the symptoms. Permanent mental derangement is very exceptional. Usually when the violence of the toxaemia is over the child recovers fairly rapidly, and the chorea is ended more quickly than in the more chronic and milder varieties.

The *paralytic* form usually supervenes upon one in which the movements have been active. Its most striking feature is the extreme atony of the voluntary muscles. On palpation they feel soft and almost downy, an attribute which has given origin to the term *chorea mollis*, by which this form is sometimes known. If the patient be taken out of bed the head falls back entirely unsupported and the limbs fall down as though lifeless. Grimacing and slight twitching of the limbs can still be seen. Generally the pupils are dilated and react feebly to light. The knee-jerks are lost in most cases. A special characteristic, more in evidence in this form than in others, is aphasia. For weeks, even for months, no attempt is made to speak. Motions and urine are passed incontinently, probably rather because the child is unable either by speech or gesture to signify its needs than from actual sphincter weakness. In spite of the apathetic state, of the aphasia, and of the incontinence, there is little or no dulling of the mind, for when the child is better it will be found that she remembers what has been going on under her observation, even to the minutest details. Such cases are always protracted and convalescence is slow, but ultimately, perhaps after several months, complete recovery occurs.

The term "*cardiac* form" has been applied to those cases in which the heart is seriously affected, whilst the signs of chorea are proportionately slight. Pericarditis, myocarditis, and endocarditis may each or severally accompany chorea, but they should more properly be regarded not as chorea of the heart but as indications of rheumatic heart disease. It is doubtful whether true chorea cordis is ever so obvious as to justify us in naming a special form of chorea after it. Indeed, some have denied its existence, and regard all cardiac signs in chorea as due to local infection or intoxication by the rheumatic organism.

Latent chorea especially deserves attention, for it is a form of the disease which is little recognized and frequently overlooked. Moreover, it is important, for coincident with it serious crippling of the heart may be in course of development. This is more particularly true of mitral stenosis, as Dr. Poynton has recently indicated.

It is diagnosed by regarding unconsidered trifles. Slight fidgetiness and mild psychical unrest, with deterioration of school work, especially in writing and arithmetic, and a weakened mental concentration may be the only indications of chorea. The diagnosis is assisted by signs of mild rheumatism other than chorea, signs which taken alone carry little conviction, but when considered together, indicate a smouldering rheumatic infection. Such are epigastric pain, growing pains, epistaxis, anaemia, and recurrent tonsillitis.

In this respect the *ocular phenomena* which I have described afford, I think, considerable help. The pupils are frequently dilated in chorea, and the action of the iris muscle is abnormal. Perhaps the most striking pupillary sign is hippus or a rhythmical contraction and dilatation. Not infrequently the pupils are unequal, an inequality which increases when contraction is induced by light or accommodation, the iris in the more dilated eye reacting more sluggishly than its fellow. When the choreic attack is over the pupils again become equal in size and activity. Alteration in the shape of the pupils may occur. Thus the usual circular orifice may become oval or irregular, to regain its normal shape when the attack has subsided. Lastly, its position may be altered so that it becomes eccentric, and on contraction this eccentricity is increased, the pupil usually travelling upwards and inwards. The only explanation I can give for these various phenomena is that the iris muscle shares with other muscles inco-ordinate movements, paresis and atony. In such a case the heart's action is often rapid and may be irregular, whilst dilatation and murmurs generally appear sooner or later. As has already been mentioned, a mid-diastolic murmur is likely to be heard. Such a murmur often indicates the advent of mitral stenosis, being gradually replaced by one presystolic in time and rough and rumbling in quality.

Residual chorea is the name given to a condition which persists, sometimes for several weeks after the disease has ceased to be active. It may have all the features of latent chorea. Indeed, in such cases it is really a form of latent chorea, for, in spite of the absence of active signs of the disease, the heart may become steadily more affected, showing that the rheumatic infection is still smouldering on, although its virulence has diminished. In other cases the movements become automatic, so that those characteristic of chorea persist although the disease proper is over. In yet others the child lies almost motionless and aphasic, though generally still grimacing slightly.

Treatment.

A very astute physician, so I have been told, once said that one of the most dangerous attributes of chorea is its treatment. While it is active, rest both to body and mind is essential. All occasion for excitement or fear should be carefully avoided. It is common knowledge that such events as a birthday party or a Christmas tree are followed not infrequently by an accentuation of the symptoms. In hospital in all but the mildest cases recovery is quicker if the child be screened off from the others in the ward. Where the movements are severe enough to cause the child to hit and bruise herself against the side of the cot it must be suitably padded.

The food need not be restricted in any way, for an ample diet is required to supply the loss of energy, which may be very considerable. In cases of difficult mastication and swallowing, semi-solid foods will usually be found the most satisfactory. In quite exceptional cases oesophageal or nasal feeding may be necessary.

During the time in which I was Medical Registrar at this hospital I had an exceptional opportunity of judging the respective merits of some of the most lauded drugs employed in chorea. In one ward large doses of sodium salicylate were used; in another arsenic was pushed; in a third—in most cases—no drug was administered. Though watching these cases for a considerable time, I was unable to assure myself that progress was quicker or more sustained in one ward than another.

Sodium salicylate, however, has a special sphere of usefulness in this condition, for although its effect on the chorea itself may be unconvincing it strikes at the root of the matter. Chorea I believe to be always rheumatic, at least in part, and therefore I always administer sodium salicylate lest fresh rheumatic manifestations develop which might thus be avoided. If there is any rise of temperature the use of salicylate seems to me imperatively to be called for. I cannot altogether follow my respected teacher Dr. Lees, who gives as much as 400 to 500 grains daily, and has given even more, for I am not sure that such doses do more good than those which are smaller (10 to 20 grains three times daily). On the other hand, his cases show that there are no grounds for that fear of the cardiac depressant effect of salicylates which is so generally entertained. There are a few important points to be remembered when salicylates are given to children. It is essential that before the treatment is started the bowels should be opened freely, and it is a good rule before increasing the dose to be sure that an evacuation has taken place during the preceding twelve hours.

The ill effects of the drug which are most to be feared are those of acid intoxication. Vomiting is succeeded by drowsiness, which if untreated leads to air-hunger and coma. The breath smells of acetone, and acetone is found in the urine. A few deaths have occurred. Such a catastrophe may be avoided if the bowels are not

allowed to be constipated and if sodium bicarbonate is administered at the same time in double the amount. With the onset of acetonuria, vomiting, or drowsiness the salicylate should be stopped temporarily. I have been able to collect twelve cases of acid intoxication following the administration of salicylates, and in every one constipation had been present.

Arsenic, in spite of its general employment, ought not to be recommended, in my opinion. Its good effects are difficult to see, but its bad effects are occasionally only too obvious. Severe gastritis is apt to be set up, and not a few cases of arsenical neuritis have followed.

The good results claimed for ergot by Dr. Eustace Smith have not been obtained by most other physicians.

Sedatives such as trional, chloral, bromides, sulphonal, and chloretone are widely used. Of these sulphonal is far too dangerous a drug to employ in this condition. Chloretone is sometimes useful in doses of from 3 to 5 grains thrice daily; but, although it has only been used extensively for a few years, already cases of poisoning have been noted. To obtain sleep in maniacal or very restless forms of chorea, chloral and bromides are valuable, especially if combined with a warm pack.

After-treatment is important. When the chorea is no longer active, the child often remains apathetic, scarcely moving in bed, and occasionally refusing to speak. Good co-ordination may not be re-established for several weeks. Power is still feeble. In such cases absolute rest is no longer indicated, and does more harm than good. Massage and easy exercises should be employed, and the child should be encouraged to test her powers of motion and speech.

While still in bed such easy re-education exercises as touching the nose, apposing the fingers of the two hands individually, making figures or houses with bricks or dominos, and playing draughts, are all useful. Later, the cribbage board supplies a more difficult exercise, the patient being instructed to put the peg into particular holes—for example, into every second or fifth. Still more exacting is the building of card houses. The legs may be re-educated to perform co-ordinate movement in a similar manner. The following exercise is useful to begin with: Heel to toe, heel to shin, heel to knee, done first with one leg, then the other. Fraenkel's boards may be used when co-ordination has begun to improve. When the patient gets up the leg movements may be corrected still more by encouraging her to walk on a certain plank or along a straight line, or on a particular part of the pattern of the carpet. By such simple devices as these recovery may be hastened considerably.

ON AVOIDABLE DIFFICULTIES IN THE HAND-FEEDING OF INFANTS.

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So much has been written on the subject of infant feeding that it seems almost to require an apology from any one who ventures to add another to the many contributions which are made on this subject. The comparative values of raw milk and sterilized milk, of whole milk and milk diluted, of the various proprietary foods, of the usefulness of added sugar and cream—all these matters are discussed and rediscussed, and not without benefit to the reader, for the results of a man's own personal experience can never be anything but welcome. One cannot, however, avoid remarking that the writers, ably as they descant upon their several views, rarely ask themselves why it is that the infant should so often show a helpless incapacity to digest the food provided for him however skilfully this may be chosen, or however carefully it may be prepared.

Now the majority of children at birth are healthy and fairly vigorous, and a healthy normal child has a digestive capacity which as a rule adapts itself readily to a food chosen with judgement—that is, with due regard to the age of the infant and the probable competency of its stomach. If the child give trouble and show signs of acidity and flatulence, it does so in most cases because the digestive organs are already in a state of derangement. We must remember that a newborn baby is suddenly transported from a temperature of 100° F. in which he has grown and developed, to a temperature of 65° or 70°. This is its first shock: an abrupt drop of 30° or more in the warmth of its surroundings. The child is then, after more or less delay, bathed—often very leisurely; dried slowly, and afterwards laid quite uncovered upon his nurse's lap while she attends to the navel and sews on a flannel bandage. The exposure of the sensitive body during all this time, with little or no protection, to a temperature 30° below that to which it has been accustomed must constitute a second shock of no little severity. Many vigorous infants, no doubt, bear this exposure without obvious signs of injury, and if fed with discretion, especially if they have the advantage of a nurse's or mother's breast, give little trouble to their attendants. On the other hand, infants of low resisting power often by this means contract a serious chill which at once disorders the stomach and causes them to digest with difficulty even their mother's milk. They vomit after taking the breast or show signs of flatulence and discomfort, so that the mother, after a short trial, is instructed by her medical adviser to give up all idea of nursing, from the mistaken notion that her milk is unsuited to her child. If brought up by hand and fed from a bottle, such infants suffer still more urgently from vomiting, flatulence, and abdominal pain. For all this trouble the food chosen is generally held to be accountable, and change after change is made in the hope of hitting upon something which will be welcome to the stomach and put an end to the distressing symptoms, quite regardless of the fact that while the derangement persists no food can be expected to agree. If now the real nature of the difficulty be recognized and proper steps are taken, the signs of uneasiness begin to abate and finally disappear, for as the catarrh subsides the digestive processes recover their normal vigour. In that case the food last experimented with gets the whole credit of the improvement. But if the treatment be injudicious or incomplete, if the proper steps are not taken to avoid unnecessary exposure and protect the infant from further chills, the disorder of the stomach not only remains unrelieved but suffers almost daily a fresh impulse, so that that which was in the beginning a merely temporary upset becomes a confirmed disorder which drugs and changes of diet alone have little power to correct. It is only by attention to the simple cause of the trouble that we can have any hope of bringing the child's organs into a more manageable state and paving the way for his eventual recovery. Any one who examines an infant suffering from obstinate marasmus of this purely functional character will commonly find the feet icily cold, and probably the legs and thighs as well nearly as high as the hips. It is impossible that with such a condition of the circulation a child's digestive energies can be anything but unsatisfactory, and it is hopeless to expect an improvement as long as this state of things is allowed to continue.

It is by no means for the first time that I urge this vital matter upon the notice of the profession; but I find it very difficult to gain for it the attention it deserves. In spite of the consideration, which no one would venture to dispute, that to ensure completeness of digestion we must have healthy digestive organs to work upon, the means by which soundness of these organs is to be determined and maintained are too often completely ignored. The family practitioner is too apt to regard such domestic matters as washing, clothing, and nursery management in general as lying outside his province, to be left without hesitation or inquiry to the discretion of the child's mother or nurse. In some cases, no doubt, this can be done without risk of harm; but it is not every nurse, or even every mother, who is intelligent, careful, and accurate, and whose reports can be accepted as strictly in accordance with the facts. Without any intention to deceive, very wrong impressions may be conveyed; for loose thinkers are often poor observers, whose statements of fact must be received with caution, and only accepted if confirmed. Such persons are far too ready to mistake assumptions for realities, and to declare that to be right which they do not certainly know to be wrong. I should find it very difficult to say how often I have been told that an infant's feet were quite warm when the application of my hand has shown me that they were the exact contrary. I submit, then,

that care in these matters is as important—is even more important—than the choice of a food; and that a practitioner who neglects them is doing only half his duty, and is, moreover, setting up obstacles in his own path, and unwittingly creating difficulties which more prudent conduct would avoid.

I have ventured elsewhere[1] to formulate three simple rules for the hand-feeding of infants. These if carefully observed would, I am sure, make the rearing of bottle-fed infants a far easier matter than it often proves to be. I have no desire to claim any novelty for these rules, unless, indeed, it be new to bring simple reason and common sense to bear upon our task, taking account only of plain facts and leaving theoretical considerations on one side.

The first rule is directed to the maintaining of the warmth of the surface and the avoidance of chills from exposure:

1. Take care that the infant is bathed as quickly as possible in hot water, and that his feet and legs are never allowed to get cold.

The second rule aims at encouraging the digestive processes by variety of flavour in the food. This is a matter of great importance to hand-fed babies, especially to those whose digestive deficiencies have already been a cause of anxiety. An infant, it is true, will digest his mother's milk morning, noon, and night, and want no change. He is taking his natural food which his healthy organs are specially constructed to digest, and he draws it straight from the gland, fresh, pure, and uncontaminated by noxious germs. A hand-fed baby, on the contrary, whose food is only something like that provided by Nature, and is often far from pure, is apt to resent the monotony of his artificial diet. In any case, his stomach should have every advantage we can give it, and we learn from ourselves that variety in diet is an active aid to normal digestion. Therefore:

2. See that a sufficient variety of flavour is contained in the several meals.

It will usually be sufficient to give two differently tasting foods alternately in the day and a third for the night. In exceptional cases, however, a greater variety than this is required.

The third rule relates to cleanliness, etc.:

3. See that the feeding apparatus is absolutely clean, the food fresh, and the sanitary arrangements generally in good order.

Milk should be kept outside the living room; cream is only to be used when quite fresh; foods are not to be allowed to stand for hours after being mixed; and highly perishable articles, such as whey, barley water, etc., must be made fresh and fresh as required. At any rate, whey is not to be depended upon after four hours nor barley water after six.

These rules, as I have said, are nothing more than reasonable precautions, and any thoughtful person might frame them for himself. I believe the neglect of them—and that the first two are continually neglected no practical physician would venture to deny—is due to the attention of the family medical adviser being too entirely engrossed with the conflicting claims of the legion of foods, digestives, and modified milks which are pressed upon his notice; and also, and perhaps chiefly, to his feeling that the nursery arrangements are none of his business, and must be left to the attention of the person who is responsible for them. Experience has, however, shown me that this is leaning upon a very feeble support, too apt to fail us at our need. In any case, it does not absolve the medical attendant from the duty of himself keeping an eye on these matters, for I think I am quite within the mark when I say that more than half of the cases where difficulties arise in the course of hand-feeding—cases in which the infant digests with difficulty, frequently vomits, and suffers continually from flatulence and discomfort—are due solely to breaches of the above rules. Owing to neglect of these precautions many young children contract a catarrh during the first few weeks or even the first few days of their lives. This mishap may so heighten their susceptibility as to be a cause, not only of serious trouble during the first twelve months, but of much anxiety for years afterwards. In every case of difficulty in the bottle feeding of an infant the practitioner should personally look into the conditions in which the child is being brought up, and do his best to remedy without delay any carelessness or neglect in the nursery. By this means he will be far more likely to bring about the result he desires than by any ingenuity he may show in devising a food, or care in prescribing the exact proportions of casein, sugar, and cream to be allotted to the several meals.

REFERENCE.

[1] See a paper by the author on "Infant Feeding" in the *Index of Treatment*. Bristol: J. Wright and Son.

ORAL SEPSIS IN GENERAL PRACTICE.

By ARTHUR MILLS, M.D.,
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Soon after starting practice in this country district in Fifeshire I became impressed with the number of patients who sought my advice and who were suffering from what at first sight appeared to be a marked degree of anaemia. These patients were most frequently women, but, as a rule, considerably over the age that one associates with chlorosis. Their complaints were various in character, but usually referred to a disordered state of the digestive organs, want of appetite, flatulence, pain, and sometimes vomiting. Occasionally they volunteered the information that they had frequent "bilious attacks," or that they "suffered from their liver." On the other hand, the symptoms complained of were not infrequently those which could be more easily attributed to their apparently anaemic condition, namely, breathlessness on exertion, weakness, giddiness, and palpitation. Constipation was the rule in these cases, but rarely a very urgent symptom, and once or twice an attack of diarrhoea was the immediate cause of my being consulted. The one feature which led me to group these patients together as being of one type was the very evident pallor of the face and mucous membranes. The face had a pasty-white appearance quite unlike chlorosis, and the mucous membranes were decidedly pale.

At first my efforts in the way of treatment of these patients were directed to relieving the stomach symptoms with suitable drugs and diet, regulating the bowels, and then administering iron, the idea, of course, being to improve the blood condition, which I believed then to be the true cause of their trouble. The stomach symptoms were frequently relieved for the time being, but the blood condition appeared to be affected very little, and sooner or later the patient returned to repeat the story. All this was in marked contrast to the behaviour of a typical case of chlorosis which I treated about this time in the usual manner. The foul odour of the breath in one of these cases led me to make a more careful examination of the mouth than usual. I found that the patient had a large number of decayed stumps, that the gums were swollen and red, that they bled easily on pressure, and that pus could easily be expressed from between tooth and gum, in many places. I persuaded this patient to have her decayed stumps removed, ordered her a mouth wash of hydrogen peroxide, recommended the frequent use of a toothbrush, and afterwards prescribed iron in the usual manner. She made a rapid and complete recovery. Similar cases, and others where the condition of the mouth was by no means so evidently bad, responded equally well to this treatment.

According to Dr. William Hunter, the credit of having recognized the fact that indigestion may be caused by a foul condition of the mouth belongs to Professor Miller; but Dr. Hunter himself appears to have been the first to emphasize the importance of septic conditions in the mouth as a cause of disease.[1] He originated the name "oral sepsis," intending it to cover not only pyorrhoea alveolaris, which is only one (and a comparatively rare one) of a large number of possible pathological conditions in the mouth, but "every other form of trouble, dental and oral, producible by septic infection for which an appropriate adjective can be found," the essential feature of all being that they are produced by pus organisms.[2] It is in this sense that the term "oral sepsis" is now used, and it covers, amongst others, all such common conditions as dental caries, stomatitis (numerous forms), gingivitis, alveolar abscess, and pyorrhoea alveolaris.

Although there has been a tendency to attach more and more importance to this subject within recent years, yet modern textbooks of medicine devote little or no space to it, and it is probable that the general practitioner does not yet value oral sepsis at its true worth as a direct and indirect cause of many disorders and ailments which he is called upon to treat.

I have kept a record for the past four years of all those patients who have come under my care and in whom this condition appeared to have a direct bearing upon the case. They number 80—61 females and 19 males—and are of all ages between 7 and 70. Many of the commonest forms of oral sepsis appear to be quite frequently unaccompanied by any degree of pain, and it is of interest to note that of these 80 patients only 8 came to me with the condition of the mouth as their complaint.

The cases can be conveniently arranged into groups.

GROUP I.—*Oral Sepsis associated with "Indigestion" and Symptoms suggesting Anaemia.*

This group comprises 36 cases—27 females and 9 males. Want of appetite, pain in the stomach, flatulence, irregular attacks of vomiting—known in this district as "bilious attacks"—lassitude, breathlessness, giddiness, palpitation, were the most frequent complaints of these patients. All without exception were sallow and anaemic in appearance; 12 were young women between the ages of 19 and 25, and in each of these 12 cases a rapid and complete recovery took place after due attention had been paid to the septic condition of the mouth. Iron was administered in the majority of instances, but in 4 cases at least recovery followed without its use, and to all appearances as quickly and as completely. The remaining 24 of this group ranged in age between 25 and 70. Recovery in these cases, though not so rapid, was also the rule. It appears to be more difficult to persuade these older patients to submit to the necessary treatment. Many become reconciled to a low level of health, and accept weakness and lassitude, "indigestion," and a frequent "bilious attack" as part of their destined lot; 10 of these 24 are of this description and remain untreated.

GROUP II.—*Oral Sepsis and Disorders of Menstruation.*

The following are notes on 6 cases in this group:

(*a*) Did not menstruate till the age of 16. She had been systematically dosed with iron from the age of 14½ onwards. Menstruation started six weeks after the mouth condition had been treated.

(*b*) Menstruation started at the age of 17, three months after the treatment of her oral sepsis. She had also been treated with iron for long periods previously.

(*c*) First menstruated at 20, over a year after some attempt had been made to deal with the mouth. The menstrual periods are still very irregular and a recent examination of the mouth disclosed three or four decayed stumps, surrounded by soft red gum discharging pus, and an extremely dirty tooth plate.

(*d*) Age now 23, menstruated at 14, and for a few years was quite regular and had little discomfort. About three years ago began to suffer from pain, sickness, and vomiting for one or two days at each period. She also lost her appetite and suffered from an occasional "bilious attack." The periods have now become very irregular, and she frequently misses five, six, or seven weeks. There is a perfectly clear history in this case of marked oral sepsis from the age of 16 onwards. Her pallor is very striking. She has taken iron on different occasions for three months at a time with no appreciable effect.

(*e*) Menstruated first at 15½. Her periods were then very irregular and she had frequent attacks of sickness and vomiting and the appetite was poor. She had five months' amenorrhoea at the end of 1911 and beginning of 1912, at which time she had a chronic alveolar abscess. The whole of the upper teeth, which were extremely bad, were removed; her periods immediately returned and the dyspepsia ceased. She came to me again on November 1st, 1912, complaining that she had again missed five and seven weeks and that a fortnight before she had had an attack of sickness and vomiting. She had numerous decayed stumps in the lower jaw. These were removed on November 3rd. She menstruated on November 14th (nine weeks after her previous period) and subsequently on December 16th, and then middle of January, and there is now no complaint of "indigestion." This patient also suffered from interesting symptoms of *arthritis*, described in the appropriate group.

(*f*) Well-marked oral sepsis. She did not menstruate till she reached the age of 19. In this case the mouth was not treated. Dosing with iron, however, had no effect whatever, as she had had no iron for six months previous to the onset of menstruation.

GROUP III.—*Oral Sepsis and Vomiting in Pregnancy.*

The notes of the 3 cases in this group are as follows:

(*a*) Mouth untreated; suffered for five months from incessant sickness and vomiting, and was confined to bed for two months previous to her labour.

(*b*) I was called repeatedly to see this patient in the early months of pregnancy, as she was suffering from persistent vomiting. Most of the usual remedies were tried with no effect. Removal of septic stumps, and the frequent use of a mouth wash was followed in a week by almost complete relief. At the end of another week she was perfectly well. She had then completed the fourth month, however, when some amelioration in her condition might naturally have been expected.

(*c*) Consulted me when she had been seven weeks pregnant. She complained of constant vomiting for the previous four weeks, growing worse every day, and said that she could not retain even a mouthful of water. She was extremely anxious not to take to bed. Her mouth was in a filthy condition. I immediately removed twelve teeth and several stumps. The roots of one or two molars were fringed with foul smelling granulations. She was also ordered the frequent use of a mouth wash. At the end of one week there was well-marked improvement, and thereafter she suffered only from a little sickness in the mornings. The morning sickness ceased at the end of the third month.

GROUP IV.—*Oral Sepsis and the Climacteric.*

The 9 women in this group suffered greatly from the usual disagreeable symptoms associated with the menopause as well as from disorders of digestion. Three of them complained also of recurring attacks of an eczematous rash over the face and neck and wrists. In 5 the oral sepsis was treated, and they were soon rid of the greater part of their symptoms. The number treated included 2 of those who suffered from skin trouble, and in these 2 cases the rash did not reappear.

GROUP V.—*Oral Sepsis associated with other Localized Suppurations.*

From the following record of 9 cases it would appear that oral sepsis tends to lower the resisting powers of the individual to pyogenic infection in other parts of the body. In each of the following cases oral sepsis was a very marked condition:

(*a*) Had an anal abscess.

(*b*) A carbuncle.

(*c*) A septic hand twice within six months without history of injury.

(*d*) A septic adenitis (bubo) following a scratch in the region of the vulva.

(*e*) A septic prepatellar bursitis.

(*f*) An indolent corneal ulcer of nine months' duration. After the mouth was treated the ulcer gradually healed, though no change whatever was made in the local treatment.

(*g*) Three attacks of furunculosis in 1908, 1911, and 1912, a whitlow in July, 1912, and in August of the same year a septic finger following a slight bruise with no abrasion of the skin. The mouth was treated in September, 1912. There has been no further trouble.

(*h*) A septic tonsillitis in March, 1912, a septic hand in October, 1912, following a slight bruise without abrasion of the skin. This patient also suffered in 1911 and 1912 from severe acne vulgaris. Numerous septic stumps were removed in October, 1912, the tartar was removed from his sound teeth, and toothbrush and mouth wash were ordered.

(*i*) An indolent sore over an interphalangeal joint of many months' duration. This was supposed to be tuberculous, but looked more like a chilblain that had refused to heal. It healed up at once after treating the oral sepsis.

GROUP VI.—*Oral Sepsis and Arthritis (10 Cases).*

This forms an interesting group, and in it the direct relationship between the two conditions appeared most evident.

(*a*), (*b*), (*c*), (*d*), and (*e*) were 5 cases of true rheumatoid arthritis,[3] and in each the onset of the disease was preceded by a well marked septic condition of the mouth. Treatment of the mouth was carried out thoroughly in 2 cases, and was quickly followed by very great improvement. Both have since been entirely free from "active" pains, their troubles now being associated with the already deformed and partially ankylosed joints.

(*f*) Had an attack of rheumatic fever on September 16th, 1912. He was treated with sodium salicylate, and on the fifth day pulse and temperature were normal and there was no pain or swelling in the joints, though there was some stiffness. I was called again to see him on October 9th, as he was suffering from pain and stiffness in several joints, and he was unable to walk. The temperature was normal and there was no swelling or redness of the joints. He had no appetite, felt languid and weak, and showed marked pallor. The sodium salicylate had been

stopped on September 30th. A large number of decayed stumps were removed, and a mouth wash was prescribed and sulphur as an aperient. In a week he was walking about, and in another week had returned to work.

This case is in accordance with Rolleston's statement in his Hunterian Lectures on acute arthritis of doubtful origin, that a patient who has oral sepsis may recover from the rheumatic attack and subsequently suffer from arthritis due to infection derived from the mouth.

(*g*) A case very similar to the above, where the mouth was untreated. She was confined to bed for five months, and has made anything but a complete recovery.

(*h*) A woman of 60; complained of pain and stiffness in one knee of seven months' duration, growing gradually worse. On attempting to walk there was a decided limp, and she evidently suffered great pain. She also complained of some pain in the left shoulder, and one metacarpo-phalangeal joint was thickened and tender. She had a poor appetite, felt very weak, and looked "anaemic." Her mouth was thoroughly treated and she was ordered an iron and quinine mixture. In ten days she walked without a limp, and in three weeks was practically well.

(*i*) This patient's menstrual and digestive symptoms are recorded in Group II. She consulted me on November 1st, when she had had pain and swelling in two interphalangeal joints, and in one wrist, of three or four days' duration. Pulse and temperature were normal. The mouth was treated (numerous stumps removed) on November 3rd. On November 8th she complained of pain and swelling in another small joint, stiffness of both wrists in the morning, and pain in the left shoulder, and on November 14th, when the joints were almost well, she had an extremely tender, red, inflamed spot over one internal malleolus, with great swelling of the foot. Complete rest and hot fomentations for two days was followed by recovery. This patient has had no further trouble.

(*j*) This was a boy of 6½ who had had his tonsils removed on September 10th. I was called on October 7th, to find him suffering from rheumatic fever, and a few days later he had an attack of pericarditis. Dental caries had been very extensive from the age of 3 onwards. One decayed tooth had been broken when having his tonsils removed, and at the site of this broken tooth there was a mass of pulpy granulation tissue discharging pus.

Why we should be so careful to obtain asepsis in, say, an amputation of a finger and make no effort whatever to obtain the same condition in an amputation of a tonsil I am at a loss to understand. It is generally agreed, too, that the path of infection in rheumatic fever is by the tonsils, and it is also well known that an attack frequently follows at an early date after the removal of the tonsils. It is surely, therefore, not at all unlikely that that attack is either directly caused, or at least predisposed to, by oral sepsis.

OTHER CASES.

Besides the groups of cases mentioned above, some individual cases appear worthy of fuller description.

A. A man, aged about 45, consulted me because he had vomited once or twice during the preceding few days, was "unable to eat anything," and was "growing yellow." When I saw him he was suffering from typical catarrhal jaundice. Inquiry elicited the facts that he had had a very poor appetite for six or eight months and had been feeling anything but fit for his work. His mouth was not one of the worst, but the necessary treatment was undertaken, and he made a rapid and permanent recovery.

B. A woman, aged 32, was operated upon for a ruptured ectopic pregnancy. She was out of bed in three weeks and made a perfect recovery up to a certain point, but remained very anaemic for eight months. During that time she had all the advantages of fresh air and sunshine and good food, and was systematically dosed with iron. Treatment of her septic mouth was then quickly followed by a return to normal condition.

C. A man of 50, who, when I was consulted, was suffering from a severe attack of acute gastritis. He was very feverish and in great distress, the vomiting having been severe for two days. The mouth was one of the worst in my record, and the odour was perceptible immediately on entering the room. His wife informed me that "his breath had been like that since ever she knew him," and that "he had suffered from his stomach for many years." I was also informed that "he had tried everything," and that his daily diet for many months had consisted of a little milk pudding. Two of the lower incisors were easily removed with the aid of a pair of dressing forceps and scissors. Attention was given daily to the mouth, and it was quickly got into better condition. This attack of gastritis occurred eighteen months ago, since when the patient has enjoyed excellent health.

D. This woman had a severe attack of brachial neuritis, probably predisposed to by a long spell of oral sepsis and the consequent malnutrition.

E. A case of chronic phthisis of four years' duration had come to this district for a change of air. The cough was not at all troublesome, but she complained of "want of appetite and indigestion." The condition of her mouth was very bad indeed, but she informed me that she had been told "she was too weak to have anything done to it." Removal of the offending stumps was not at all difficult, and was quickly followed by improvement in the appetite and digestion. It must be admitted that in such a case as this the treatment of even a slight degree of oral sepsis might be all-important.

F. A woman, aged 46, had suffered from well-marked oral sepsis for at least ten years. A year and a half ago she had an attack of appendicitis, possibly a direct result of the septic mouth.[4] For some time previous to this, and up to the time when she consulted me, she had felt tired and out of sorts. She complained of intense pain over the eyes coming on a few minutes after attempting sewing or reading. She reported that she had had her glasses "strengthened" three times in three months. She was using 3.50 dioptres, although refraction showed she had barely 1 dioptre of hypermetropia. This was a case of severe asthenopia the result of oral sepsis. Optic neuritis was also well marked, and acuteness of vision was subnormal. Three weeks after the mouth was thoroughly treated these symptoms had disappeared.

G. I was called to see this woman, who had been in bed for three or four months. I was told that she had had an attack of cardiac failure, that she had had extensive dropsy, and that the abdomen had been tapped. She had evidently had a very serious illness. About a fortnight previous to my visit she had had intense headaches, but the pain in the head had gone, and she had become gradually more and more "stupid." She was only semi-conscious, was unable to speak, asked for nothing, but swallowed liquid food and water when they were given to her, and suffered from complete incontinence of urine and faeces. Her temperature was subnormal, and her pulse 72 and irregular. She had well-marked cardiac murmurs. The mouth emitted a very foul odour, and she wore an upper artificial plate. Inquiry elicited the fact that the plate had not been out since she took to bed. It was removed with some difficulty, and there was brought away with it a very septic tooth to which it was attached. Her lower incisors were also in a filthy condition. Treatment of the mouth was at once instituted. Improvement set in almost immediately. In a week the patient was quite sensible, and in fourteen days she was feeding herself, and had complete control over urine and faeces. Thereafter she made a perfect recovery.

As in a large majority of these cases of oral sepsis pallor of the skin and mucous membranes had been well marked, an appearance which Hunter records in 78 cases out of 1,000 out-patients coming under his notice during twelve months,[4] an effort was made to learn something of the character and degree of the anaemia which this condition produces. Examinations of the blood were made in six cases chosen from amongst those in whom this appearance of pallor was most striking. The results were as follows:

Females:	
Case I, aged 55	Haemoglobin, 84% Reds, 4,600,000
Case II, aged 23... ...	Haemoglobin, 89% Reds, 4,216,000
Case III, aged 25 ...	Haemoglobin, 90% Reds, 4,400,000
Case IV, aged 52 ...	Haemoglobin, 84% Reds, 4,400,000
Case V, aged 46	Haemoglobin, 85% Reds, 4,350,000
Male:	
Case VI, aged 28 ...	Haemoglobin, 93% Reds, 4,512,000

These figures would show that oral sepsis in the forms in which it is commonly met with does not of itself necessarily produce an appreciable degree of true anaemia, but rather a condition of pseudo-anaemia such as is commonly observed in a person suffering from nausea. The same condition is observed in Bright's disease, and in some forms of heart disease, where we know that a marked pallor may exist with haemoglobin and corpuscles nearly normal.

This finding has of course nothing to do with the possibility of oral sepsis being the cause of certain malignant forms of anaemia as described by Hunter and Dalton.

The general appearance of the patient appears to be no index whatsoever as to the condition of the blood. After making these six examinations I took a specimen of blood from a young perfectly healthy pregnant woman. By no stretch of the imagination could she be described as looking "anaemic" and yet her blood only showed 68 per cent. haemoglobin and 3,900,000 reds.

CONCLUSIONS.

1. That oral sepsis is a very prevalent condition. That its effects are definite and far-reaching, and that it must form a very important factor in the general health of the community.

2. That, as many forms of oral sepsis are not associated with pain, the patient rarely complains of the condition of the mouth, and as his general appearance and symptoms are frequently strongly suggestive of anaemia, the true state of the case may easily be overlooked.

3. That it is a common cause of disorders of the stomach, is directly associated with different forms of arthritis, and that it either predisposes the individual to, or at times directly gives rise to, suppurative processes in other parts of the body.

4. That at critical periods in the life of an individual, as for example at puberty, during pregnancy, at the climacteric or in the course of a chronic disease, it may be the all-important factor in the case.

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AUTOGENOUS VACCINES IN THE TREATMENT OF CHRONIC JOINT AFFECTIONS

(RHEUMATOID ARTHRITIS AND GONORRHOEAL ARTHRITIS).

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RHEUMATOID ARTHRITIS is, I think, a misleading term. I would prefer to call the condition "metastatic arthritis"—that is, metastatic to some infective focus in the body.

The joint is swollen and more painful at times than at others; the muscles around the joint show marked wasting. On palpation the local temperature may be slightly raised, the synovial membrane is thickened and fringing of it may be felt. On movement of the joint a soft crackling is felt, very different to the bony creaking felt in osteo-arthritis, which latter I consider to be quite a different disease, although in more elderly subjects rheumatoid arthritis may pass on to a condition of osteo-arthritis. Further, in some cases of rheumatoid arthritis there is a considerable quantity of free fluid in the joint cavity, and lateral mobility in the joint itself can be obtained.

Pathologically, rheumatoid arthritis presents features of a chronic infection, the synovial membrane is pinker than normal, it is soft and succulent, and often villous processes project from it. The articular ends of the bones beneath the articular cartilages show rarefaction, while microscopically there is present some extent of round-celled infiltration in the synovial membrane. Although the synovial membrane is thickened, it does not show a tendency to ulcerate or undergo destructive changes, as in the case of tubercle, and possibly syphilis.

I have repeatedly tried to obtain cultures from the fluid aspirated from these joints, using various culture media, but in no case with success. It has been suggested, and I think feasibly, that the organisms present are in such a low state of virulence and numbers that they will not grow; others have said that the organisms lie hidden in the connective tissues of the synovial membrane, but a very careful search in a series of cases failed to reveal any such organisms. Other observers assert that they have been able to grow organisms from these joints, and have produced this villous type of rheumatoid arthritis in rabbits by inoculating the animal with this organism; but such observations have not been confirmed.

I think we can safely say that the cause is not a form of tubercle. There is no tendency to caseation or to the formation of abscesses and sinuses or to destruction of articular cartilage. Von Pirquet's reaction has invariably been negative; this fact, though proving nothing, at any rate helps in excluding tubercle.

Further, I think we can exclude syphilis. It is true there is a type of syphilitic rheumatoid arthritis, but it is rare, and rheumatoid joints do not resemble syphilitic joints. Out of a large number of cases tested only a very small percentage have given a positive Wassermann reaction. The majority gave a negative history of syphilis, and those who gave a positive Wassermann reaction and in whom there was other evidence of syphilis did not respond to antisyphilitic treatment only, as far as their joints were concerned. I would, however, suggest that the Wassermann reaction be tried in these cases, for if it be positive it is well to administer antisyphilitic treatment along with treatment appropriate for the joint condition.

I have been interested some five years in this disease, and am becoming more convinced that rheumatoid arthritis is due to metastasis from some infective focus. The disease attacks the young and middle-aged, and in children there is that form called Still's disease, the cause of which is not yet ascertained.

Metastatic arthritis may commence at so early an age as 15 or 16. Commonly we see it in young women at 18 years and upwards. From 35 years onwards to the menopause it is again common. Frequently it is said to follow parturition, and other diseases affecting the female genital organs.

The three main points in the treatment of this disease are:

1. To find the infecting organisms.
2. Having found them, to raise the opsonic index of the individual against these organisms; this is most quickly accomplished by the use of autogenous vaccines.
3. Having rendered the patient artificially immune, to remove where possible the primary focus and apply local treatment to the affected joints.

The commonest foci of infection in my cases have been the following:

The Teeth.

Pyorrhoea alveolaris is frequently associated with rheumatoid arthritis. I have frequently seen cases who have been to American dentists and have been fitted with a dental plate. On removing the plate a series of stumps have been disclosed beneath it, bathed in pus of a most offensive kind containing a very mixed infection. Gold crowns are also bugbears. A dentist friend, by way of experiment, placed a gold crown over a carious molar tooth of his own and awaited results. He developed joint pains, rheumatic pains about the shoulders and back, which subsided immediately the crown was removed. The tonsillar crypts are also another source of infection. I have at present a case of a woman suffering from a very progressive type of rheumatoid arthritis, the primary focus being a pair of caseous, dirty tonsils, causing her, amongst other things, to have a most offensive breath.

In cases of pyorrhoea I have found the following form of treatment give most satisfactory results, and in a number of cases cure.

The mouth should be thoroughly washed and the teeth scrubbed for two or three days with normal saline solution without antiseptics. This gets rid of all extraneous matter from the teeth. At the end of three days a small quantity of pus is squeezed up from the gum, a slide taken, and agar tubes inoculated.

It has been a well-marked phenomenon that in these cases of mouth infection there is marked breaking up of the leucocytes seen on the slide taken, and very few of the organisms are intracellular. In brief, there is a poor attempt at phagocytosis. A vaccine is prepared and an initial dose, varying with the patient, given. After the second injection, if a second slide be taken and stained, it is often remarkable to see the phagocytosis present. It is now evident that the opsonic index is increasing, and this is the time to remove the septic stumps and bad teeth.

I have known cases in which doctors have advised patients to have their teeth removed for this condition. The whole mouth has been cleared at one sitting, and after all this the patient's joint condition has become worse. The teeth should be removed two or three only at a time, and this only after the opsonic index has been raised. Otherwise a large raw surface for absorption is opened up to organisms to which the patient has but poor resistance. If many stumps are removed while the patient's immunity is being artificially increased by means of autogenous vaccines, anaphylactic symptoms appear.

This treatment of joints associated with pyorrhoea has given such gratifying results that I now use it as a routine procedure.

In caseous tonsils a vaccine should be prepared and given, and then enucleation of the tonsils performed.

The Nose and Naso-pharynx.

Rheumatoid arthritis in connexion with septic polypi in the nasal cavities is not uncommon. In a girl aged 18, who had rheumatoid arthritis well started in the joints of the fingers of both hands, a vaccine containing *Micrococcus catarrhalis* and *Staphylococcus aureus* was made from her own discharge. There was in this pus no attempt at all at phagocytosis. She was vaccinated, but phagocytosis was most marked after the second inoculation of the vaccine. The polypi were then removed and she made a complete recovery from her joint trouble, having had no recurrence, either in the joints or of the polypi.

Chronic suppuration in the sphenoidal and frontal sinuses and in the antrum of Highmore are again possible foci of infection. I have opened a knee-joint for acute pneumococcal infection following on a pneumococcal infection of the maxillary antrum.

Chronic Otorrhoea.

I have seen one case of rheumatoid arthritis of both knee-joints clear up in a middle-aged woman after vaccine inoculation combined with clearing out of the antrum and middle ear. Here, again, few bacteria were intracellular. It is therefore very important in cases of these metastatic joints to make a thorough examination to exclude a primary focus in the mouth, nose, throat, and ear.

The Lungs.

Rheumatoid joints have been associated with bronchitis and bronchiectasis. I remember a case of the disease associated with bronchitis in which the pneumo-bacillus was isolated. A vaccine was prepared and given and the joint condition improved markedly, and finally the patient went back to work.

The Intestinal Tract.

Rheumatoid arthritis is often associated with dyspepsia, and I have seen it in association with chronic gastric ulcer and chronic appendicitis. With both these conditions there is a degree of intestinal stasis. I have frequently opened the abdomen and found the condition of pericolitis of a membranous kind affecting peristalsis. I can recall cases of marked amelioration in rheumatoid joints after gastro-enterostomy and ileo-sigmoidostomy, and Mr. Arbuthnot Lane has had cures. In this type of case vaccines do not produce much benefit. The condition causing the stasis must be removed. An *x*-ray examination should be made after a bismuth meal and any stasis or kinks looked for. If the intestine can be proved to be working efficiently, a very careful bacteriological examination of the urine should be made. If organisms are found—notably *B. coli*, in the absence of intestinal stasis—a vaccine should be made, and in this special type of case I have seen a great deal of good follow.

Leucorrhoea.

This often dates from a confinement, and in a number of cases I have examined I have found a displaced uterus and retention of some products of conception which have become adherent to the uterine wall. Any inflammatory condition in the uterine annexes will by contraction tend to deviate the uterus and cause passive congestion with leucorrhoea. Cultures taken from inside the cervix in these cases have shown mixed infections, the commonest form of organisms being the *B. coli*, a diplococcus, and staphylococci.

The vaccine base should be given prior to rectifying the uterus, so as to raise the immunity. I have seen many cases made worse by curettings and other operative procedures performed when the patient's immunity was low, but I have never seen anything but good follow when the surgical procedures have followed the second inoculation of the vaccine.

When once the primary focus is cut off and the patient's immunity raised to the particular infection, local treatment by Bier's bandage, Scott's dressing, etc., to induce an artificial hyperaemia with blood now enriched with opsonins, may be instituted. It is useless to resort to these local measures, and baths and spa treatment alone; the symptoms only and not the cause are treated. For contractions I usually apply extension during vaccine treatment. I have not seen drug cataphoresis do any good.

Chronic Gonorrhoeal Arthritis.

I believe this to be due to a mixed infection of the gonococcus and staphylococcus. The joints are characteristic. There is swelling and often oedema in the tendon sheaths around, well seen in the wrist-joint, marked pain, and a very early tendency to stiffness and limitation of movement of a most obdurate character. Adhesions form both within the joint and around it within the fibrous capsule, tending early to fix it. Any attempt at forcible movement is painful and only tends to again light up the trouble.

A vaccine should be made from the urethra by inserting the loop well into the meatus. The gonococcus grows best on slightly alkaline agar the surface of which has been smeared with decomplementized blood serum. I am very indebted to Dr. D'Este Emery for drawing my attention to this and sending me some tubes.

I give 100 million gonococci and 150 million staphylococci for a preliminary dose, and increase it to even 500 million gonococci and 1,000 million staphylococci, provided the reaction is not great. After the second dose an anaesthetic is given, and the adhesions in the joint broken down. I have seen no harm follow this proceeding, and with massage and daily movements while under the influence of vaccines I have patients back at their work again whose joints have been given up as hopeless. Bought vaccines do not appear to act so well as autogenous in these cases, and this has been most marked in some of my cases. Gonococcal arthritis is perhaps one of the types of case which best lends itself to autogenous vaccination.

Combined with this the chronic gleet should receive attention, and the best method I find is massaging the penis over a stout metal bougie passed into the urethra, followed by the insertion of a protargol bougie. Copaiba should at the samé time be administered by the mouth.

VACCINES IN THE TREATMENT OF CHRONIC BRONCHITIS AND OF ASTHMA.*

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CHRONIC bronchitis, with a tendency to frequently recurring acute attacks, and asthma, with or without bronchitis, have this at least in common from the point of view with which I am here concerned—namely, that they are frequently obstinate in their character and difficult to cure. Any method, therefore, which gives better or more permanent prospects of relief than those commonly in use seems worthy of trial, and I hope to show by a survey of the cases I have had under treatment during the past three years that in vaccine therapy we have a remedy which, if it does not always effect a complete cure, does, at least in most instances, give considerable relief, even in cases where other measures have failed more or less completely.

RECURRENT BRONCHITIS.

The cases upon which this opinion is based are selected ones—not in the sense that I have picked out all those in which the results are good and discarded the others, but in the following respects: (1) All are cases in which the complaint was of some standing. (2) All have been under other forms of treatment for varying periods, but with more or less want of success. As, however, in most instances the other methods of treatment (medicinal, hygienic, etc.) were continued with, any difference in the results may fairly be attributed to the additional factor—that is, the vaccine. (3) Only those which have been under observation, or have been followed up, for some time have been included. This excludes cases which have only been under treatment quite recently and in which it is too soon to speak with any certainty as to the results; also those in which treatment was only carried out for very short periods and then, for one reason or another, given up. If the latter group were included, the failures would certainly bulk larger, but it would hardly be fair to judge a method by cases in which treatment had not been given a reasonably long trial.

* Read before the Medico-Chirurgical Society of Glasgow.

Autogenous vaccines were always employed, prepared usually from the sputum (obtained as free from contamination as possible, after cleansing of the mouth by brushing and rinsing out with boiled water), occasionally from swabs taken from the naso-pharynx. The details of preparation of the vaccine have been modified from time to time, but it has been my invariable practice to include in it all organisms found abundantly both in film preparations and in culture, so as to make as certain as possible of including the actual offending germs. I believe this is essential, because at present we have really no satisfactory method of determining which of the organisms found are pathogenic and which are not. It has also been my endeavour to employ always strains of organisms but little removed from those occurring in the human subject, and latterly nothing more remote than the first subcultures have been used. By making the original cultures fairly thin, it is usually possible to obtain pure growths in the next generation; where this has not been the case mixed growths have been employed to make up the vaccine, as potency is to my mind more important than extreme accuracy in dosage of the individual organisms in a mixed vaccine. Another important point in making subcultures, especially in dealing with such organisms as the streptococci and the *M. catarrhalis* group, is that they should be made from several colonies, and not from one only. So many strains of these organisms are probably quite non-pathogenic that, until better means of differentiating them are found, it is necessary to include a good representation so as to ensure having some of value.

Chronic or Frequently Recurrent Bronchitis.

Bacteriology of 16 cases:

Pneumococci	12 cases.
M. catarrhalis group	12 ,,
Streptococci	6 ,,
Staphylococci	5 ,,
Bacilli of Friedländer group ...	5 ,,
M. paratetragenus...	3 ,,
Unidentified organisms	2 ,,

Mixed growths occurred in all cases, and the vaccines have generally contained two or three organisms, sometimes even four. The most striking difference between this table and that given by Allen[1] is the complete absence of the *B. influenzae*. This may be partly due to the fact that I have not always used blood-agar for cultures, but as film preparations were invariably examined I think the chief reason is the rarity of this organism in Scotland at the present time. In this connexion it may be stated that the epidemic of so-called influenza prevalent here this winter has, in my experience, been caused invariably either by pneumococci or streptococci.

The following are short notes of 6 representative cases out of these 16:

CASE I.

M., aged 40. Chronic bronchitis and pharyngitis. In October, 1911, his sputum showed pneumococci and a few staphylococci. Doses containing 50 million of the former organism only were put up and sent to his medical attendant with instructions to give a half-dose at once when any acute exacerbation threatened, otherwise to give a full dose once a week. The attacks were reported later to be cut short by this plan, and also to be less frequent. In December, 1912, the sputum showed pneumococci and *M. catarrhalis* to be dominant, and a fresh vaccine containing 50 million of the former and 200 million of the latter was sent with similar instructions. The latest report (March, 1913) states that the patient "has been able for work all winter, and has only had two comparatively trivial attacks of bronchitis." (Greatly benefited.)

CASE II.

F., aged 14, who for several years has suffered from almost constant nasal and bronchial catarrh with acute "influenzal" attacks. Neither the nasal nor the bronchial secretion showed the presence of any *B. influenzae*, but from growths obtained a vaccine was prepared containing 25 million pneumococci, 100 million *M. catarrhalis*, and 60 million of an organism of the *B. Friedländer* group. Treatment with this at first, and later with double these amounts, for a period of six months at from seven to ten day intervals, has greatly improved the patient's general health and lessened the tendency to acute attacks, but there is still wheezing in the chest and a good deal of nasal discharge. Treatment is being continued with still larger doses. (Greatly benefited.)

CASE III.

M., aged 28, undergoing treatment for nasal obstruction, and who for two years has had increased susceptibility to attacks of bronchitis. Sputum contained abundant pneumococci and no other organism grew in cultures. Three months' treatment with doses ranging from 40 to 200 million resulted in complete freedom from bronchitis which has lasted up to date for almost a year. In this case, however, the honours must probably be shared between the vaccine and the surgical measures in the nose. (Cure.)

CASE IV.

F., aged 22, who for three years has suffered from chronic bronchial catarrh, worst in winter, with frequent "catching of colds," which often amount to actual bronchopneumonia. She is free from cough at times, but there are always râles to be heard in the chest. Tuberculosis was suspected for a time, but tubercle bacilli have never been found in the sputum. Examination of the sputum at various times constantly yielded pneumococci and *M. catarrhalis* with occasionally *M. paratetragenus* or staphylococci. Vaccine treatment carried out practically without intermission for a year, the dosage being pushed up to 200 million pneumococci and 500 million of each of the other organisms. After that treatment was stopped. Result one year later: Complete freedom from acute bronchial attacks, although there are still some moist sounds in the chest and occasional cough, but not sufficient to bother the patient much. (Practically cured.)

CASE V.

F., aged 44, who had resided for a number of years in the East Indies. Since her return to this country about five years ago she has suffered from almost constant bronchitis. Before coming under my care she had undergone almost a year's vaccine treatment in London, but with very little benefit. Careful examination revealed nothing wrong beyond the bronchitis. Under treatment for six months with vaccines of several organisms—pneumococci, streptococci, *M. catarrhalis*, and pneumo-bacilli. The composition of the vaccine was varied several times, and the dosage was pushed until as much as 1,000 million *M. catarrhalis* and 500 million of mixed pneumococci-streptococci were being given, doses which gave the patient considerable general discomfort, but which did not result in any amelioration of the symptoms. The treatment was then given up, and this winter the patient has spent in South Africa, to see the effect of a warmer and drier climate, but with what result so far I have not heard. (Failure.)

CASE VI.

M., aged about 40, with chronic naso-pharyngeal catarrh and crepitations near one apex (tubercle pretty well excluded), every now and again bronchitis and bronchopneumonia. In March, 1912, sputum gave a growth of pneumococci, *M. catarrhalis*, and a minute motile Gram-negative bacillus (which grew on ordinary agar). The patient was given a vaccine containing these three organisms for about five months, with resulting considerable improvement both in his general health and in the local condition. In November, 1912, up till which time he had been free from any bad colds, his sputum and naso-pharyngeal secretions were examined, and on this occasion a growth of *M. catarrhalis* and streptococci was obtained. The patient was put on a vaccine of these organisms, and this winter, although his general health has not been good, he has only had one bad attack of tonsillitis and pharyngitis, which, however, did not extend further down the respiratory tract. (Considerably improved.)

Summary of Results of Treatment in the Sixteen Cases.

In 7 cases there is now such almost complete freedom from colds and bronchitis that they may be considered as practically cured.

In 4 there has been marked improvement, although they cannot be said to be quite cured; two of these are still under treatment.

In 4 the improvement has only been slight. In none of these was treatment persevered with for over four months.

In 1 case there was no improvement even after eighteen months of vaccine treatment.

From these figures it may be said that vaccine therapy does hold out very considerable hope of effecting improvement in chronic bronchitis even in cases which have proved resistant to other modes of treatment, but—and there is always a but—it cannot be said to be certain of doing so, and in all cases it should be made clear to the patient at the outset that fairly long continued or repeated courses of inoculation are likely to be necessary to obtain good and lasting results. The average length of time for which these 16 cases were under treatment, constantly or intermittently, was nine and a half months.

I would now advise any patient, even when supposed to be cured, to have occasionally a few protective inoculations against any organisms to which they are specially sensitive, and more especially before the onset of winter. For this purpose either an autogenous vaccine might be employed, or one of the several so-called "combined vaccines for colds" which are on the market, and which aim at producing immunity against all of the commoner cold-causing germs. I have no personal experience of the use of these, but one objection which they seem open to as regards their use in Scotland is that none of them are suited in their composition to the infections which are

most common here at the present time, however suitable they may be for other parts of the country.

The dosage of the vaccines employed has varied considerably in the different cases, but the general tendency has been to increase the amounts given, pushing the dose in each individual case until one is arrived at which produces after inoculation some definite reaction in the way of general discomfort, slight feverishness usually, and not infrequently some temporary aggravation in the amount of the bronchial secretion.

Vaccine treatment is not, of course, recommended to the exclusion of other measures, but simply as an "extra" where these fail to give satisfactory relief. The ordinary medicinal and hygienic measures applicable should be employed, and, in particular, I consider it highly important to cleanse the nose and naso-pharynx at least twice daily with some form of douche and swab to remove mechanically at least some of the offending organisms which are constantly lurking in these situations, ready to infect the lower respiratory passages when given a suitable opportunity.

Asthma.

In the case of asthma we have to deal with a disease which is different from bronchitis, in that it is by no means of purely bacterial origin, but without going into the vexed questions of its etiology and pathology, I shall merely say here that I am of opinion that in many cases microbic infection is one, and an important one, of the factors which may precipitate an asthmatic attack. This is probably especially the case where there is bronchitis or infection of some other part of the respiratory tract associated with the spasmodic asthmatic attacks.

Asthma. Bacteriology of 15 cases:

Pneumococci	present in all cases.	
M. catarrhalis group ...	,,	14 ,,
Staphylococci	,,	8 ,,
Streptococci	,,	6 ,,
B. of Friedländer group ...	,,	6 ,,
Diphtheroid bacilli	,,	3 ,,
M. paratetragenus	,,	1 case.
B. influenzae	,,	1 ,,
Unidentified organism ...	,,	1 ,,

Mixed infections are commoner in my cases than in those recorded by Allen.[1] The pneumococcus found in all my cases seems to take the place of the streptococci which he records from 96 per cent. of his. Many of his streptococci occurred either in exceedingly long chains or as a form which he calls *S. maximus*, the individuals being large and some of them in each chain Gram-negative. I have met with both forms amongst my cases. Carmalt Jones regards an organism which probably belongs to the *Micrococcus catarrhalis* group as a possible cause of asthma.

Case I.

F., aged 28, who has suffered from bronchitis with occasional asthmatic attacks—not, however, of a very severe nature—for several years. The first examination of the sputum, obtained during an attack, gave a growth of *M. catarrhalis* and diphtheroid bacilli, and a vaccine was prepared containing 100 million of each. A half-dose was given first, then three full doses. A second examination of the sputum showed the presence also of pneumococci; 25 million of these were added to the vaccine and administration continued weekly for three months, the dosage being gradually pushed to double the original amounts. Treatment was then stopped, and four months later (April, 1913) the patient reported that she had been free from asthmatic attacks, although she still had some bronchial catarrh. (Considerable improvement.)

Case II.

F., aged 37, with chronic bronchitis and asthma of long standing. Greatly emaciated. Organisms: Pneumococci and *M. catarrhalis*. A dose of vaccine, containing only 16 million of the former and 50 million of the latter, brought on next day an attack of acute bronchitis. A subsequent injection of half those amounts was also followed by considerable reaction. Treatment was persevered with for three months at about ten-day intervals; in no instance was a bigger dose than 20 million pneumococci and 60 million *M. catarrhalis* given, and every dose was followed by considerable discomfort and frequently by an actual asthmatic attack. As no improvement was taking place, further treatment was declined. (Failure.)

Case III.

F., aged *circa* 40. Severe asthmatic attacks for several years; no bronchitis. Also suffers from cystitis. Cultures from the sputum on several occasions always yielded pneumococci and *M. catarrhalis*. Treatment was commenced with 12½ million of the former and 100 million of the latter, the dosage being soon increased to double those amounts. Injections weekly were continued over a period of almost ten months, with the result that the attacks are becoming much less frequent and less severe. Treatment is being continued. (Considerable improvement.)

Case IV.

M., aged 51, had suffered from bronchitis and asthma since childhood, and had also an old tuberculous lesion at one apex, which has for many years appeared to be quite quiescent. First culture almost pure pneumococci, a few *M. catarrhalis*, and diphtheroid bacilli. After two months' weekly injections of an autogenous pneumococcal vaccine in doses of from 50 to 120 million there was distinct improvement in the patient's breathlessness and in the frequency of the asthmatic attacks. A second examination of the sputum gave a growth of the same organisms, but a vaccine was made up containing pneumococci 100 million, *M. catarrhalis* 150 million, and diphtheroid bacilli 25 million. Treatment with this was continued for three months, injections being given weekly. At the end of this time the patient volunteered the statement that his asthma was very much improved, and that although he seemed to be bringing up more sputum, it came very much more easily. He then wished to try without further treatment, and since that time—nearly a year ago—has not been heard from. (Considerably improved.)

Case V.

F., aged 50, with bronchitis and asthma of ten years' standing. Organisms from sputum: Pneumococci, long-chained streptococci, and abundant bacilli of the Friedländer group; on a later occasion a few colonies of *M. catarrhalis*. Treatment for four months with a vaccine of mixed streptococci and pneumoccci 60 to 180 million, and bacilli 200 to 400 million produced some improvement, but not sufficient to induce the patient to continue treatment for longer, as she objected to the pain and stiffness incidental to the injections. (Slight improvement.)

Case VI.

M., aged 40, who has suffered from asthma since infancy. Cultures both from the sputum and direct from the naso-pharynx gave a growth of pneumococci, *M. catarrhalis*, some streptococci corresponding in character to Allen's *S. maximus*, and a few leptothrix-like organisms. Four months' treatment with pneumococcal-streptococcal (25 to 100 million) and *M. catarrhalis* (100 to 200 million) vaccine has produced very distinct improvement. Treatment is being persevered with. (Considerable benefit.)

Case VII.

F., aged 20, with asthma, bronchitis, and nasal catarrh of ten years' standing. The patient has had nine operations on the nose, with in one instance about a year's relief from asthma. She has also tried residence abroad, and is particularly careful in looking after herself, but withal has very frequently to have recourse to sprays and other asthmatic remedies. Before treatment was commenced she was showing no tendency to improvement either in frequency or severity of attacks, but was rather drifting into chronic invalidism. Examination of swabs and sputa on numerous occasions always showed the presence of pneumococci and *M. catarrhalis*, and at times of such organisms as staphylococci, streptococci, diphtheroid bacilli, *M. paratetragenus*, and bacilli of the Friedländer group. The vaccines employed have always contained the first two organisms, and at times some one or more of the others; comparatively small doses have been employed throughout. Treatment was commenced in May, 1911, and has been kept up since that time, the injections being given as a rule weekly. In the summer of 1911 she was comparatively well, but this was not unusual, as she was always freer in summer than in winter. The winter of 1911–12, however, showed a marked improvement upon any past winter for a number of years. In the summer of 1912 the injections were reduced for a time to fortnightly, but as in the autumn there was a tendency to recurrence of attacks, the vaccines were again given weekly, and have been continued so up till the present time. The patient has come through this winter—a particularly trying one—with only one cold, which soon cleared up, and a very slight asthmatic attack, and she has been able to participate in all sorts of exercise and social events. (Practically cured.)

Case VIII.

F., aged 55, for many years had been troubled with frequently recurring attacks of bronchitis and asthma, especially in winter; latterly they had been becoming more common and less easy to throw off. In September, 1910, sputum gave a growth of *M. catarrhalis* and pneumococci, and a vaccine was prepared containing 200 million of the former and 25 million of the latter. Twelve doses of this were given at intervals of about a week, save for two intermissions during acute attacks. During January and February, 1911, the patient was free from acute exacerbations, but in March had an attack, when, in addition to the same organisms as before, pneumo-bacilli were obtained in culture. A fresh vaccine containing 300 million *M. catarrhalis*, 50 million pneumococci, pneumo-bacilli in amounts ranging from 50 to 200 million, was made up and given weekly. In May the patient stated that she had passed the best winter and spring she had had for twelve years. Vaccines stopped in June, 1911, and the patient remained almost free from colds till January, 1912, when a fairly severe attack occurred, the organisms found being pneumococci and pneumo-bacilli. A small dose of vaccine was given and the attack cleared up quickly, then four larger doses were given during the next

month. She had one further slight asthmatic turn in April. During the summer of 1912 she remained quite free; this winter she has not been under observation, but at Christmas time she wrote saying she had had no further attacks. (Practically cured.)

CASE IX.

F., aged 18, with bronchorrhœa, constant colds, and asthma of at least six years' standing. Tonsils and adenoids have been removed, but without much improvement. In January, 1912, she was put on an autogenous vaccine of pneumococci (75 million) and *M. catarrhalis* (200 million) weekly. In September on one containing pneumococci 125, pneumobacilli 100, *M. catarrhalis* 300, and staphylococci 300 million. In December, 1912, the dosage was commenced to be pushed. Pneumococci 200 up to 500, *M. catarrhalis* 300 to 800, and staphylococci 300 to 800 million, with excellent results. The patient at the present time (April, 1913) has been free from asthma for four months, although she still has some bronchial discharge, and catches cold rather freely. Treatment is being continued, but now with rather smaller doses. (Much improved.)

Summary.

Of the 15 cases 6 must be excluded from the present survey as having been for too short a time under treatment to state the permanency of the results; of the remaining 9 (those given above)—

2 may be regarded as practically cured and free from asthma;
5 have been considerably improved;
1 shows only slight improvement; and
1 has not been benefited at all.

These figures are, as might be expected, not quite so favourable as in the case of simple chronic bronchitis, but they are at least sufficiently encouraging to warrant a trial of vaccines in intractable cases of asthma. Here again, however, prolonged treatment is necessary. My cases have been receiving injections, constantly or intermittently, for, on an average, over ten months, and in the two instances in which the best results have been obtained for nearly as long as two years.

With regard to dosage, I have not found it advisable to push the amounts to the same extent as in chronic bronchitis. Asthmatics are usually too sensitive, and large doses are apt even to excite actual attacks. Only in one instance (Case IX) have doses which I would consider at all large been found of advantage.

Even more than in the case of bronchitis must other possible factors in the causation of the spasmodic dyspnœa be attended to if good results are to be obtained, particularly the state of the whole respiratory and alimentary tracts. In a recent paper Charlton Briscoe [2] lays stress upon septic absorption as playing a prominent part in the production of asthma, and insists on the importance of discovering the source of this absorption, and its removal if possible, also the employment of constitutional and special treatment by drugs, etc. The place for vaccines is as an adjunct to those methods when they do not produce the desired results. With this opinion I am in substantial agreement.

It should be stated that whilst I am wholly responsible for the vaccine treatment in most of the cases, in some instances treatment was commenced by the late Dr. James Miller, but the patients have since been under my charge.

REFERENCES.

[1] R. W. Allen: *Bacterial Diseases of Respiration and Vaccines in their Treatment*. London, 1913. [2] Charlton Briscoe: *Journ. of Vaccine Therapy*, February, 1913, p. 29.

THE Medical Chamber of Vienna has decided to make a careful investigation in the municipal schools of Austria with reference to scholastic hygiene. When the investigation is complete the results will be taken as a basis for the formulation of principles to be applied to the whole scholastic medical service throughout the country. The details will be left to the local authorities. In the meantime a society of school hygiene has been formed at Vienna.

COURSES of training in hygiene and tropical medicine for missionaries were established two years ago by the Institute for Foreign Missions in Lombardy. At the present time some thirty young priests who propose to work as missionaries are receiving instruction. On April 5th they were examined by a commission composed of three doctors. There were also present at the examinations Dr. Vogano, Bishop of Ezane, the Director of the Institute, and other clerics connected with foreign missions.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

POISONING BY MORPHINE AND ATROPINE.

POISONING by morphine and atropine is so uncommon that the following case seems worth recording.

A young woman was found in bed unconscious at 7.30 a.m. She was cyanosed, the breathing was shallow and irregular, tending to the Cheyne-Stokes in character. The pupils were equal and contracted, but not to pin-points, and the conjunctivæ were injected. There was complete absence of reflexes. The skin was dry and the pulse small—120. A letter was found written to her mother which made it clear that it was a case of suicide. An empty hypodermic tube was found which when full would have contained 2½ grains of morphine. Subsequently, after death, two other tubes were found hidden under the mattress of her bed. In all, supposing the tubes had originally been full, she would have taken 7 grains of morphine, and ⅛ grain of atropine. She had vomited, apparently in the night, and possibly after the first doses of morphine, so that the exact amount taken is uncertain.

It is unnecessary to go into the details of the treatment. The stomach was washed out with solution of potassium permanganate, and injections of strychnine were given subsequently. Artificial respiration was performed, and she was bled on two occasions. The bleedings appeared to do good for a time, as she breathed better and was less blue afterwards.

At 10 p.m. the corneal reflex had returned, but she was still unconscious. At 2 a.m. she was found to have a temperature of 105° F. She was very blue, and breathing in short jerky respirations, with intervals in which she did not breathe at all. The corneal reflex was again lost. With artificial respiration, etc., she lingered on till 10.45 a.m. The heart continued to beat for a short time after respirations had ceased.

Post mortem the brain, lungs, kidneys, and other internal organs were deeply congested. The right heart was full of venous blood, and there were *ante-mortem* clots in the left ventricle. There was only an ounce or two of urine in the bladder.

The points of interest in the case are:

1. The length of time that elapsed from the time she was found until death, 27½ hours later. As she was deeply comatose when found but was heard moving in her room at about 1 a.m., it seems probable that she took the poison at that hour, which would make the time about 33 hours. I can find no record of anything approaching this time before death in opium or morphine poisoning. Was the prolongation of life due to the atropine?

2. The quiet pulse, which varied, but was generally at about 120, I consider due to the paralysis of the vagus inhibitory centre.

3. The absence of sweating (again atropine), combined with the almost total suppression of urine, are perhaps answerable for the high temperature during the last eight hours of life. In fact, did she in the end die of uraemic poisoning?

London, S.W. E. G. HUNT, M.D.

ETIOLOGY OF BERI-BERI.

I NOTICE on perusing your columns from time to time that it seems to be more or less accepted nowadays by a large section of the profession that beri-beri should be looked upon as a "deficiency" disease—in other words, that it is due to the consumption of rice from which the pericarp has been removed, the pericarp being supposed to contain a necessary essential towards the upkeep of the nerve fibre. Now during ten years of residence in Southern Nigeria I saw a number of cases of beri-beri. Of these, however, four stand out clearly in my memory; they were young Englishmen whose houses I visited every day, with whom I on numerous occasions had lunch or dinner, as the case may have been, and consequently whose mode of life I was thoroughly acquainted with. With regard to these cases I can guarantee that they lived as well as any ordinary young men would live in England. There was at all times an abundance of fresh food on the table: chicken, mutton, fish, fruit, and vegetables were always at hand, and although they may

have had a little polished rice with curry occasionally they had no greater percentage of it than any ordinary person in England. One of these patients died; the others recovered on going home.

I would beg some of the recent school of tropical pathology to give an explanation of the above cases, and would ask them what particular hypothetical substance they would postulate as having been absent from the food in question. None of these men was alcoholic.

E. G. Fenton, F.R.C.S.I.,
Rio Gallegos, Patagonia. Late S.M.O., Southern Nigeria.

A USEFUL SIGN IN ACUTE APPENDICITIS.

In October, 1912, I began to notice a marked state of congestion of the right superficial circumflex iliac vein in cases of acute appendicitis.

At first I thought this might be merely a coincidence, but its regular appearance when I was on the outlook for it makes that extremely unlikely; in fact, I have never failed to find it in my own cases, and the senior house-surgeon at our infirmary reports that he has always seen it in the cases coming under the care of my colleagues. Therefore I think it must be nearly always present and distinguishable.

The congestion is often so marked that a glance at the abdomen reveals it at once; in other cases it is not so prominent, but still quite distinguishable. Nowadays, if I find this condition, and the history or other symptoms suggest appendicitis, I am led to make a more careful examination than I would perhaps otherwise make, and in every case so far I have been able to verify my diagnosis on the table.

The condition, I imagine, may be due to pressure on the external iliac or common iliac vein, or simply to general congestion of that region.

Only once in the past six months have I operated upon an appendix case in the quiescent stage, and in that case the vein did not show up at all.

It may be that attention has been drawn to this condition before, but if so I have not seen it; and it appears to me, if my experience be verified by others, that here we have a readily recognized additional sign of acute appendicitis.

John Blair,
Honorary Surgeon, Royal Albert Edward Infirmary, Wigan.

TWO CASES OF FRACTURE IN THE REGION OF THE WRIST-JOINT.

Case I.—*Impacted Colles's Fracture in a Woman aged 93.*

I was sent for on February 3rd, 1913, to see an old lady, aged 93, who had fallen early the same morning and had hurt her left wrist. I found a typical impacted Colles's fracture, which, having regard to the extreme age of the patient, I did not think held out much prospect of a satisfactory result. As the bones were very tightly impacted I obtained assistance and administered chloroform; I then managed with considerable difficulty to reduce the fracture, and set it on Carr's splints.

There was very little swelling, and I commenced passive movements of the fingers on the second day, and of the wrist-joint at the end of a week. As the patient was very feeble the splints were kept on for six weeks, so as to protect the arm in case of another fall, but they were removed for a short time daily in order that the arm might be carefully rubbed, and the joints moved. At the end of that time complete union had taken place, with perfectly free movement of the wrist and radio-ulnar joints.

An *x*-ray photo, which was taken about three months after the accident, was interesting, as showing how, even in a patient at the age of 93, excellent results may be obtained after a badly impacted fracture, and also to what a small degree callus had been thrown out round the site of the injury.

Case II.—*Vertical Fracture of Lower End of Radius.*

On April 15th, 1913, I was called to see another case of injury to the wrist. The patient, a lady aged 52, a professional pianist, had fallen on her left wrist whilst avoiding a motor car; there was considerable swelling, but no deformity. She complained of slight pain, which was greatly increased on extreme flexion, but I could only detect a slight ridge on the posterior aspect of the radius running in a longitudinal direction, and extending 2 in. upwards from its carpal end, which was painful on pressure; no crepitus could be obtained.

As I was in some doubt as to the exact nature of the injury, I sent the patient to Dr. Stanley Melville, who kindly skiagraphed her. The print showed that there was a fracture of the lower end of the radius, running upwards from the radio-carpal joint, and separating the lower and inner portion of the bone.

In the meantime I applied a Carr's splint, and had the joint gently massaged from the third day onwards, passive movements being commenced on the eleventh day. The splint was worn for five weeks, and at the end of six weeks the joint had practically recovered, except for slight pain on extreme flexion.

The patient was able to resume her occupation fully at the end of four months, and now at the end of six months since her accident she has complete use of her hand with no pain, even on extreme movement.

Kensington. Ernest F. Travers, M.D.Lond.

REDUCTION *EN MASSE* OF INGUINAL HERNIA.

I was called on a Sunday night to see a man, aged about 46, who stated that he had suffered for some time from a rupture (right inguinal). After lifting a weight it suddenly came down. He pushed it back himself, using considerable force; he at once experienced pain, and vomited.

I found him somewhat pale, with a moderate amount of pain about the region of the right internal ring, with slight tenderness and resistance, but nothing very striking; the pulse and temperature were about normal. I felt then that probably some injury had occurred to the bowel when he pushed it back. I prescribed a simple bismuth and soda mixture, with 10 minims of liq. morphinae. Both pain and vomiting, however, continued for a few days. An enema was ordered, with some result, including flatus; but after this nothing was passing through the bowel.

Three or four days after my first visit I had a consultation with the late Dr. Rawlings, of Dorking, who drew my attention to visible peristalsis above and towards the right side of the internal ring. This increased the suspicion that reduction might have occurred *en masse*. Dr. Rawlings advised the discontinuance of the morphine lest symptoms should be masked. At this date the vomiting had stopped, but the moderate pain continued, and still nothing passed. I saw him again that afternoon and night, but the symptoms were no worse. Next morning he was fairly comfortable except for the moderate pain. The pulse and temperature gave no assistance in diagnosis. I again consulted with Dr. Rawlings, and we eventually decided to send him to hospital by motor. He says that the pain was considerable on the way to London. Mr. Berry operated the same evening at the Royal Free Hospital, and found a definite band of the sac tightly gripping the bowel, which although very dark had not lost its lustre. The patient recovered, and when last I saw him was doing his work and supporting his home.

In my opinion this case illustrates the comparatively moderate symptoms which may accompany a severe abdominal lesion, and may serve at some future time to put a fellow practitioner on his guard.

James W. Peatt, L.R.C.P.Edin.,
Buckhurst Hill, Essex. L.S.A.Lond.

THYROID SUBSTANCE IN ECLAMPSIA.

Obstetricians seem to be unwilling to admit the possibility of thyroid gland substance being a cure or even a palliative of the albuminuria and skin swelling which always precede yet are not always followed by eclampsia.

The influence of thyroid gland substance in these conditions (I speak of two observations) is so marked, the relief of giddiness, swelling, and check to albuminuria are so pronounced, that it is impossible to overlook the beneficial effects of the medicament.

It is not difficult to propound a theory which might explain the necessity of the exhibition of thyroid gland. There are individuals in whom the thyroid secretion is always less than normal. With such persons the thyroid may be unable to meet the extra demands of pregnancy.

A more complex theory rests on the more than suspected connexion of the thyroid and the urogenital system in both sexes. Suppose an individual in whom the ovarian secretion is less than average, though apparently sufficient to meet the requirements of the system. Let such an individual become pregnant; then as the ovaries are more or less quiescent in pregnancy, the ovarian secretion becomes diminished, if not entirely suppressed; the interdependence of ovary and thyroid is disturbed, with the effect of inhibiting to a greater or less extent the influence of the thyroid secretion.

Under either theory moderate diet and restricted activity of the patient are indicated, in order that the waste products of work and digestion may not impose too great a task on the embarrassed thyroid.

The prophylactic treatment of eclampsia by thyroid gland substance should be given an extended trial, for I do not find that objectors quote failures.

It is, of course, necessary to distinguish pre-existing nephritis or valvular heart disease from the albuminuria due to pregnancy alone.

ELIZA L. WALKER DUNBAR, M.D., D.Ch.,
Clifton, Bristol. D.A.O.Zurich, L.K.Q.C.P.I.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

BRIGHTON INFIRMARY.

PERFORATED GASTRIC ULCER IN A CHILD AGED 11 MONTHS.

(By A. HAROLD DUCKETT, M.B., Ch.B.Aberd., Assistant Medical Officer to the Institution.)

ON May 9th I received an urgent call to see a child who had arrived at the receiving ward, and on arrival I found it had just expired. It was a male child, and appeared to be so terribly emaciated and small for its age that I at first thought its death was due to marasmus accelerated by neglect, but on making a *post-mortem* examination I found another explanation. I took the following notes.

The child weighed 7 lb. 6 oz., and there were on the right thigh and right side of the chest some superficial abscesses. In the thorax I found nothing organically wrong; no bronchopneumonic signs, nor was there anywhere any evidence of tubercle. In the peritoneal cavity there was evidence of food, and on closer examination I discovered a large perforation in the stomach wall near the lesser curvature. The margin of the ulcer was in a state of necrosis, and there was slight congestion round it. There were no further ulcers visible there nor in the intestine. Traces of milk were evident in the stomach, but nothing in the nature of harder food anywhere.

As to the history of the case, I could get but little help from the mother, except that the child had been "weakly" from birth, and during the past month had often vomited after food.

The symptoms of cases of this nature have usually dated from birth, and have been attributed either to injury at delivery or embolism of the umbilical vein, but the mother says the birth was uneventful. One would not expect a single ulcer if the case were tuberculous, and the tuberculous ulcers do not apparently give rise to any definite symptoms. This case might possibly be consequent on acute gastritis, but I have put it down to be one of "simple perforating ulcer," possibly due to embolism of one of the gastric arteries or of their branches, accelerated by lowered vitality and necrosis. The accompanying photograph illustrates the size and position of the ulcer.

THE late Dr. Samson Gemmell, Regius Professor of the Practice of Medicine in the University of Glasgow, left estate valued at £109,565 8s. 8d.

THE third annual meeting of the Canadian Public Health Association will be held in Regina, Saskatchewan, in September (18th to 20th) under the presidency of Dr. John W. S. McCullough, Toronto.

Reports of Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on June 4th, Dr. PLAYFAIR in the chair, Dr. R. A. FLEMING, speaking of the *Cause of death in lobar pneumonia*, said that in autopsies of acute lobar pneumonia colourless blood in the right heart was more frequently present than in cases of death from other diseases. This thrombosis was generally regarded as agonal, but might it not in many cases have been present for hours or days before death? By *ante-mortem* clotting he meant those firm opaque fibrin clots sometimes to be found in the right auricle and ventricle and often extending far into the branches of the pulmonary arteries; they were sometimes firmly adherent to such structures as the pectinate muscles in the auricle, the chordae tendineae of the tricuspid valve, and the columnae carneae of the ventricle. In 61 autopsies of acute lobar pneumonia made by himself there was such *ante-mortem* thrombosis in 39, and in 16 of these the clot was adherent; while in 160 consecutive cases of other diseases there was right-sided thrombosis in only 20, and in 17 there was either bronchopneumonia or some acute suppurative condition. He therefore believed that in lobar pneumonia *ante-mortem* thrombosis took place some considerable time before death in more cases than were generally believed. Among the factors predisposing to this were the high carbonic acid content of the blood, and the excess of thrombokinase derived from disintegrating leucocytes, and this was also indicated by the shortened coagulation time of the blood. Further, there were signs by which this more protracted *ante-mortem* thrombosis could be recognized clinically—namely, an increasing fullness of the jugular veins in the neck, and especially a weakening of the second sound in the pulmonary area. In four recent autopsies he had had the opportunity of confirming the value of these clinical signs. The treatment of every case of pneumonia should take into consideration the danger of *ante-mortem* thrombosis, and should include the exhibition of strophanthus or digitalis in suitable doses from the first, the use of diffusible stimulants such as spirits of ammonia and chloroform, the administration of oxygen, and occasional change of the patient's posture. Further, bleeding should never be performed unless in very robust persons. Dr. GOODALL alluded to investigations made by Dr Ewart and himself which showed that the coagulation time diminished up to the crisis, and thereafter again slowly lengthened. This depended not on temperature nor on the gross number of leucocytes, but on the number of degenerated leucocytes. The blood plates had recently been shown to be an important source of thrombokinase. Dr. W. T. RITCHIE agreed as to the importance of diagnosing dilatation of the right heart in pneumonia, and for this a dusky tint of the ears, nose, and lips, and a weakening of the first sound were useful. He did not agree that digitalis was needed in every case of pneumonia, but where it was it should be given intravenously if an immediate effect were desired. Dr. EASON said that potassium iodide delayed the blood-coagulation time, and he had used it in a large series of cases of pneumonia with good results. Dr. FLEMING replied. Dr. A. NINIAN BRUCE communicated the results of an investigation into *Multiple neuromata of the central nervous system*. It was begun by the late Dr. Alexander Bruce and finished by Dr. J. W. Dawson. The case was that of a man who died when aged 30 years, and who had shown since birth extreme spastic paraplegia with contractures. The autopsy revealed nodules scattered irregularly through the grey and white matter of the spinal cord, which proved to be neuromata, consisting of nerve fibres with well-formed axis cylinders and medullary sheaths, but without nerve cells. They were definitely related to blood vessels, and could be traced along them round the periphery of the cord from the anterior nerve roots and into the white matter. Nodules were also discovered in the pons and medulla which were different in not being circumscribed, and also in their structure, which was not of nerve fibres but of fusiform nerve cells, which in places were joined end to end, forming cell chains. In these fusiform cells

it was possible to trace the development of an axis cylinder and of a myelin sheath. Dr. A. N. Bruce then explained the two main views of the development of nerve fibres, the central outgrowth theory, and the peripheral theory of multicellular chains. The investigation of these neuromata had shown that it was not possible to explain their formation on the "central outgrowth" theory, and they seemed to lend support to that of "peripheral cell chains" and of the multicellular structure of the peripheral nerve fibre. The case was thus not only of great interest as a pathological rarity, but of high importance as throwing light upon the still unsettled question of the development of the peripheral nerve fibre.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

AT a meeting on June 4th, Sir ANDERSON CRITCHETT in the chair, Mr. BISHOP HARMAN brought forward: (1) A case of *Melanotic growth connected with the iris* and seeming to originate from it. Mr. JESSOP inclined to the view that it sprang from the ciliary body, and pushed the iris on one side, causing flattening of the edge of the pupil. He agreed that it was a melanotic sarcoma. Mr. TREACHER COLLINS mentioned a case of *Melanoma of the iris*, malignant characters having arisen later. He agreed that in the present case the origin of the growth was probably the ciliary body. A possibility in Mr. Harman's case was that it was a cyst, such as Mr. Coats had described, with agglutination of the ciliary processes. (2) A case of spontaneous recovery from *Detachment of the retina*. The patient had had complete detachment for three months, and during it she was in bed three times; she refused operation. Shortly after that date the sight suddenly came back, and now there was no trace of any detachment; all that could be seen were one or two cobwebby lines in the disc. She had vision $\frac{6}{36}$ one-letter. She had 10 D. of myopia, but there had been no accident of any kind. She was a cook in a good family, and one February night she walked out from a hot room to the cold air, and her description was that something black suddenly fell over her eye, and she could not see anything more with it. Mr. GOUDIE described the case of a child which came to Glasgow Eye Infirmary with detached retina, and in whom three months later the retina became reattached. Two months afterwards it again became detached, only to again become attached. There was fair vision, and no iritis. Mr. RAYNER BATTEN said he had a case with nearly 20 degrees of myopia and detachment. Detachment occurred also in the other eye, and the patient was so blind for a year or two that she had to be led about. Later she came and said she saw a glimmer of light, and from that date her sight began to return; she accepted her lenses again, and was able to find her way about. He believed her vision was $\frac{6}{12}$. Mr. HERBERT PARSONS said he, like others, was sceptical about spontaneous recovery from detachment being possible until he had a case which altered his view. It occurred in hospital, and, though a little later the patient was very carefully examined, no trace of the detachment could be detected—not even streaks to mark what had occurred. Eighteen months later, however, he came with a relapse. Mr. MACNAB described a case of double detachment which underwent spontaneous cure. In another case in which the condition occurred there had been irido-cyclitis, and he believed it was due to tubercle of the eye; there was a large vitreous opacity, and very extensive detachment; the eye was very soft, being practically devoid of tension; the cornea could be seen to be dull and crinkled. Vision was reduced to mere perception of light. He gave tuberculin and vaccine cultivated from the patient's own *coli* bacilli. For four months now the tension had been normal, and the patient could count fingers at five or six metres. Mr. JESSOP reminded the meeting that when the Ophthalmological Society discussed the subject only one case was reported as having been cured, and that was spoken to by Mr. Nettleship and Sir John Tweedy. Many cases of cure of the condition had been reported, but they had not been lasting. Mr. ORMOND did not share Mr. Jessop's scepticism, and described a case of his own in a patient who had been treated by glasses for high myopia, and a little later she said her vision suddenly went in one eye. She had obvious detachment of the outer side of the retina. He did a sclero-puncture and removed some fluid, and in three days the detachment had disappeared. He had seen her a number of times since, and the attachment remained absolute. Vision was $\frac{6}{36}$. Mr. LESLIE PATON reminded the meeting that Mr. Harman's case was one of spontaneous reattachment, not after operation. He was more optimistic than Mr. Jessop on the subject. He had seen a case of thirty-five years' standing cured after operation, though it was a double case. In another case, that of a lady with 15 D. of myopia and vision $\frac{6}{12}$ in either eye, there was detachment in one eye, resulting in blindness, and that was followed by detachment in the other eye. After operation her vision was better than before the detachment. In the case of a girl with detachment, she was put on her back and treated with mercury and iodide, and in three months the retina had become reattached, leaving only a curious distribution of retinal pigment. In a series of 28 cases of detachment which he had looked up, 7 were cured. Mr. NETTLESHIP and Mr. JESSOP suggested that in the near future a further discussion on the subject should be held by the section. Mr. NETTLESHIP said he had records in his case-books of several cases of detachment which had recovered.

SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

AT a meeting on May 31st, Dr. BROWN KELLY, who was in the chair, contributed a paper entitled *Nasal thermometry*, this being a description of a method of determining the influence of the nose on the temperature of the inspired air. Some tables shown exhibited the difference in temperature between the inspired and expired air, and the variations which occurred in varying degrees of patency of the nasal passages. Dr. W. S. SYME reported a case of *Otogenous temporo-sphenoidal abscess* in which the capsule, a very thick one, had been removed by operation. The abscess had evidently been present for some considerable time, and only gave rise to symptoms after the patient had received a blow on the head. The abscess was opened and drained, and two days later the patient became comatose. The drainage tube was removed and the opening in the dura enlarged. A necrotic mass presented, and on removal was found to be the capsule of the abscess. The patient did well for six weeks and the abscess cavity filled up, but he ultimately died with a second abscess in the frontal region. Dr. ALBERT A. GRAY, in a lantern demonstration, traced the *Evolution of the inner ear* in regard to the round window and the aqueduct of the cochlea from reptiles to birds and mammals. The varying size of the aqueduct and the relation of the round window to the cochlea and to the aqueduct at different stages of evolution was clearly shown. He also gave a microscopic demonstration of the changes in the labyrinth found in cases of otosclerosis and deaf-mutism, and of a nerve ganglion in the human temporal bone hitherto unrecognized and recently discovered by him. The following were among the exhibits:—Dr. BROWN KELLY: (1) A man with *Double abductor paralysis* of the larynx and other symptoms of central nervous disease, due probably to patchy gummatous lepto-meningitis of the medulla and of the cord in the cervical and lumbo-sacral regions. (2) A child recovered from osteomyelitis of the superior maxilla, the so-called *Empyema of the antrum* of infants. (3) A woman with *Papillomata* growing from the region of the middle meatus; it was pointed out that, like similar growths in the larynx, they had a great tendency to recur. (4) Two cases, a woman and a girl, with *Congenital closure of the posterior nares*. Both had been operated on, but difficulty was experienced in keeping the openings patent. (5) Three cases of *Dermoids* of the anterior border of the nose. Dr. J. R. DREVER: Two patients with *Chronic oedema of the face*. In both there was purulent nasal discharge, from which an autogenous vaccine had been prepared, and was used with beneficial results to the facial as well as to the nasal condition. Dr. J. L. HOWIE: A case of *Congenital defect of the external ear*. Dr. WALKER

DOWNIE: A case of *Carcinoma of the nose*, and a specimen of *Epithelioma of the auricle*. Dr. J. G. CONNAL: (1) A woman on whom he had operated for aural suppuration with labyrinthine symptoms. The radical mastoid operation was performed, and a fistula of the external horizontal canal was found. No pus came from the fistula, and no granulations were present in the neighbourhood, hence the labyrinth was not opened. The woman recovered. (2) A man in whom was exemplified the difficulty sometimes arising in deciding whether a laryngeal lesion is malignant, syphilitic, or tuberculous. In this case one cord was dark-red and swollen and restricted in movement. As the condition was improving under antisyphilitic treatment opinion inclined towards syphilis. Dr. JAMES ADAM: A case of superficial *Ulceration of the pharynx, palate, and larynx*. At first sight it appeared undoubtedly syphilitic, but it had remained stationary for over two years despite antisyphilitic treatment. The Wassermann reaction was doubtful. Pneumococcal infection, tubercle, syphilis, and pemphigus were opinions offered as to its nature.

LONDON DERMATOLOGICAL SOCIETY.

AT a meeting on May 20th, Dr. MORGAN DOCKRELL in the chair, the following were among the exhibits: Dr. J. L. BUNCH: (1) A case of a woman, aged 50 years, who complained of suffering from great skin irritation caused by the presence of various kinds of supposed lice, specimens of which she brought with her. She was evidently a case of pediculi cerebri. (2) The case of a man who had been in the West Indies and had a discharging pigmented lesion on the right forearm; it suggested tuberculosis, syphilis, or Delhi boil; also (3) a case of late secondary and or early tertiary lesions on the face of an Italian. The PRESIDENT: A case of sloughing *Ulceration of the penis* in a young man, which at one time looked like an epithelioma. A section examined under the microscope revealed a thickening of the stratum corneum and granulosum; the mucosa was thickened, but the basal layer was intact. Dr. GRIFFITH: Some *Chromogenic ringworm fungus*, which had changed from violet to grey. Dr. KNOWSLEY SIBLEY: A case of *Diphtheritic dermatitis* in a man aged 55, sent him by Dr. N. J. Williams. For some six months he had had recurrent acute attacks of facial dermatitis, always commencing at the eyes, and rapidly spreading over the face to the sides of the neck. Dr. Galbraith had recently found the Klebs-Loeffler bacillus from the discharge from the right external auditory meatus. He had now had an injection of 5,000 units of antitoxin and was already much better. Dr. HOWARD HUMPHRIS read a paper entitled *Electricity in some diseases of the skin*.

THE Section of Odontology of the Royal Society of Medicine, at a meeting on May 26th, elected the following officers: President, Mr. C. F. Rilot; Vice-Presidents, Messrs. C. Robbins, W. B. Paterson, J. H. Badcock, J. C. Foran, A. W. W. Baker, and G. G. Campion; Honorary Secretaries, Messrs. J. H. Mummery, R. McKay, and F. Coleman; Curator, Mr. J. F. Colyer. Representatives on the Library, Finance, and Editorial Committees of the society and a council of nineteen members were also appointed.

M. E. MALVOZ recently presented to the Académie Royale de Médecine de Belgique a report setting forth the results of a ten years' campaign against ankylostomiasis in the province of Liége. It began in 1903, when a dispensary was opened for the threefold purpose of undertaking periodical examinations in the population of the different coalfields, of insisting on the microscopic control of the dejecta of all persons working in the mines, and of subjecting carriers of parasites discovered by these investigations to an expulsive treatment, whether they felt ill or not. Up to the end of 1912 there were examined 186,040 samples of dejecta, and 8,898 infected persons were submitted to antiparasitic treatment. The result was a very considerable diminution of the general percentage of those infected in the whole of the coalfields of the Bassin de Liége. In 1902 the average was 23 per cent.; in 1912 it had fallen to 2 per cent. In other words, whereas formerly 1 in 4 of the miners was infected, now the parasite was found in only 1 in 50. The great coalfields of the Ans-Montegnée plateau, which were the most infected of the whole district—more than 50 per cent. of the miners suffering from the disease—are now virtually free from ankylostomiasis.

Reviews.

INDIAN MEDICINE.

IT is claimed by natives of India that their civilization is the oldest in the world, and that their medicine is as old as their civilization. Whether or not this claim be historically justified, it is certain that in their ancient medical books there are traces of knowledge which is comparatively recent in the West. We therefore welcome Mr. BHISHAGRATNA'S translation of the works of Sushruta, the father of Hindu surgery, because, he says, few of his countrymen and fewer Western scientists "have the opportunity of reading the vast medical literature of ancient India in the original, and of thus forming an independent opinion of the solid and uncontrovertible truths and principles of the science of life and cure that underlie these works of ancient wisdom."[1] The work is to be completed in three solid volumes. The first is now before us; the second has, it is stated by the translator, already appeared, and the third is in the press. Sushruta's work, as originally written, seems to consist of only a few doubtful fragments, the work which now goes by his name being described as "only a recension, or rather a recension of recensions made by Nagarjuna, who is identified with the founder of the Madhyamika School of Buddhistic philosophy." Nagarjuna is believed to have flourished in the third or fourth century B.C., and the original work of Sushruta must have been written at least two centuries earlier.

It is often said that Indian medicine was the offspring of the influence of Greek medicine; and, in fact, from the close similarity between the *Samhita* and the aphorisms of Hippocrates, many Western scholars have concluded not only that the inspiration came from Greece, but that Sushruta is Hippocrates in an Indian disguise. On the other hand Mr. Bhishagratna seems inclined to argue that Pythagoras, who introduced the healing art into Greece, brought it from India, where he was initiated into the mysteries of the Brahmins.

Verses on medicine, hygiene, and surgery are scattered through the four Vedas. Vedic India recognized specialism. There were not only surgeons and physicians, but magic doctors, poison curers, and demon doctors. In the Vedic age, before Sushruta, the standard of medical ethics must have been very low, for we read that physicians had to go forth into the open street and call out for patients. Nowadays we have subtler methods of crying our wares. From the fact that the Vedic doctors lived in houses surrounded by gardens of medicinal herbs, it may be inferred that they compounded their own medicines. The translator gives a sketch of the origin of Ayurvedic surgery, which at first was called into being by the necessities of war. In the Rigvedas mention is made of the amputation of legs, which were replaced by iron substitutes, of the plucking out of injured eyes, and of the extraction of arrows. Sushruta first gathered into a systematic form the surgical experiences of the older practitioners and collected the fragments of medicine scattered through Vedic literature. Plastic and especially rhinoplastic operations were, as every one knows, commonly performed in India many centuries before anything of the same kind was attempted in Europe. The demand doubtless created the supply, as cutting off the nose was a very common form of punishment for conjugal infidelity and many other offences. The method of healing these deformities by the transplantation of living skin flaps is an Indian invention. Sushruta is also credited with the discovery of the art of couching for cataract. Limbs were amputated, abdominal sections were performed, fractures were set, dislocations reduced, hernias returned, haemorrhoids and fistulae removed. Where the intestines are injured Sushruta advises that the protruded part be gently replaced; when severed the cut ends should be brought together and living black ants applied. The body of the ant was then cut off, and the heads were left to serve the purpose for which

[1] *An English Translation of the Sushruta Samhita, based on the Original Sanskrit Text.* Edited and published by Kaviraj Kunja Lal Bhisbagratna. With a full and comprehensive introduction, translation of different readings, notes, comparative views, index, glossary and plates. In three volumes. Vol. I. Sutrasthanam. Calcutta: S. L. Bhaduri, No. 10, Kashi Ghose's Lane. 1907. (Demy 8vo, pp. 650; plates 4. Rs. 15, or £1.)

modern surgeons now, curiously enough, often use small clasping hooks in place of sutures for the superficial skin layer of wounds.

In dealing with midwifery Sushruta describes the different movements of the fetus during the process of parturition, the application of forceps in difficult cases, operations such as craniotomy and Caesarean section when delivery was otherwise impossible. Sushruta is said also to have been the first to insist on dissection of dead bodies as indispensable to a student of surgery. To gain skill in surgical operations pupils were enjoined to try their knives repeatedly, first on natural and artificial objects resembling the diseased parts of the body before undertaking an operation. Incision, for example, was practised on plants of various kinds, evacuation on leather bags filled with water and on the bladders of dead animals, scarification on the hides of animals on which the hair was allowed to remain. Venesection was practised on the vessels of dead animals and on the stalks of the water lily, the art of packing cavities and probing on bamboo reeds, the extraction of solid bodies on various fruits, and suturing on pieces of cloth or hide. Ligaturing and bandaging were practised on dummies, cauterization on pieces of flesh, and catheterization on unbaked earthen vessels filled with water. The quartering of sacrificial animals afforded opportunities for the study of practical anatomy. We are told also that Sushruta anticipated the homoeopathic theory. After closely investigating the various views as to what it is in the drug that cures, it is stated that he inclined to the opinion "that it is the potency of the drug that is curative, though he observes that inasmuch as potency cannot exist independently of a drug, a drug is of primary interest for all practical purposes in therapy." This explanation reminds us of the answer of the candidate for the doctor's degree in the *Malade Imaginaire*, who, when asked why opium causes sleep, satisfied the examiners with the affirmation that *Opium facit dormire quia est in eo virtus dormitiva.* Ayurvedic physicians recognized two different sets of principles in the domain of practical therapeutics, which may be stated in terms of Western medicine as the laws of similars and contraries. In addition to these, Sushruta lays great stress on the value of psychotherapy in certain forms of mental or nervous disorders.

There is an anticipation of some of our modern prophets in the following:

> A good and proper diet in disease is worth a hundred medicines, and no amount of medication can do good to a patient who does not observe a strict regimen of diet.

Sushruta emphasizes the importance of cleanliness of both spirit and body in the prevention of disease.

It is impossible to discuss Hindu medicine here in detail. Much of the book is unintelligible to the Western reader even in its English dress. But there is much in it that is interesting to the student of medical history, and if we do not accept altogether Mr. Bhishagratna's claim that practically the whole art of healing came from India, enough remains after a liberal discount to entitle Sushruta to a niche in the Pantheon of medicine.

PATHOLOGY AND TREATMENT OF DISEASES OF THE HAND.

THE surgical treatment of suppurative infections of the tendon sheaths of the hand and the fascial planes of the forearm is often a source of worry and anxiety to both patient and doctor. The former watches the process with the haunting fear that the ultimate result may be physical disability, and the latter is concerned to prevent the upward extension to new areas and obviate tendon fixation and contracture. Dr. ALLEN B. KANAVEL, in his volume *Infections of the Hand*,[2] presents a very complete study of these conditions. He has made numerous experimental and anatomical investigations, and now presents a record of these and the surgical deductions to be drawn. The experiments are of great interest. Their object is to show the precise limits and branches of the palmar spaces by means of injections into the tendon sheaths of the fingers of materials impervious to x rays and to demonstrate their relation to the bones. The anatomical researches are also characterized by great thoroughness. Figures are given showing the various structures in the hand in cross section at eight different levels, and in the forearm at several levels. If infection reaches any tendon sheath at any point Dr. Kanavel can demonstrate all the possible travellings of the pus.

The same thorough patient methods are found in the sections devoted to diagnosis and treatment. The author has apparently had the benefit of working in a large outdoor clinic, and has had the assistance of friends in the surgical work. Some of his conclusions are therefore interesting, and his results seem to be uniformly good.

He is more than doubtful of the value of Bier's treatment by passive hyperaemia in infections of the hand; he thinks it may be an aid, but not much more. Operation in suppurative teno-synovitis should, he says, always be performed under general anaesthesia and in a bloodless field. Where the process is virulent and acute the Esmarch bandage is left on the arm (decidedly slacker than for operative purposes, practically Bier's hyperaemia) for twelve to eighteen hours after operation. This is done not so much for therapeutic effects as to prevent the rapid absorption of virulent toxins.

In the treatment of carbuncle excision is condemned; the method approved is to make crucial incisions, beginning wide of the indurated area, and to undercut the flaps so formed. The propriety of operating with due regard to the various anatomical considerations involved, not in haphazard fashion but with system, is pointed out.

We have pleasure in recommending this work to the notice of practitioners, not that they may read it through, but that they may refer to it for plenty of information on the possibilities of infections of the hand. We feel bound to say that the book is too big. If such a limited bit of surgery requires 447 pages for the telling of its story, where and when shall we see the whole tale of the science and art of surgery? Dr. Kanavel's work would be more valuable if it were mercilessly cut down with careful excision of all the redundances and more precise enunciation of broad general principles.

VERTEBRATE OSTEOLOGY.

ADVANCED students in anatomy and teachers of osteology must frequently feel the need of a good work of reference on the osteology of the vertebrate kingdom. A valuable book for this purpose, as well as for obtaining a detailed account of the comparative anatomy of bones, is *The Vertebrate Skeleton*,[3] by Professor S. H. REYNOLDS, M.A., of which a second edition has recently been published. Professor Reynolds's work since 1897—the date of the first edition—has been increasingly, and latterly almost exclusively, geological. He tells us that he had thought at first of merely revising the book without bringing it up to date, but, fortunately, Professor S. W. Williston, the distinguished palaeontologist, learning that the new edition was in progress, offered to revise the section devoted to reptiles, and this induced the author himself to bring the whole book more up to date. This decision has led to considerable improvements in the volume, which can be confidently recommended as an admirable account of the vertebrate skeleton. We would particularly emphasize the value of Professor Williston's contribution to the osteology of the reptilia, the chapters devoted to which he has practically rewritten, and has contributed, in addition, some notes on the bones of birds and the stegocephalia. The whole volume constitutes an admirable contribution to comparative osteology, and medical students, and medical men, will find therein much that throws light on the skeleton of the human subject.

PIONEERS.

IT is a long time since we have read a more enjoyable book than Dr. VICTOR ROBINSON'S *Pathfinders in Medicine*.[4]

[2] *Infections of the Hand: a Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand, and Forearm.* By Allen B. Kanavel, M.D., Assistant Professor of Surgery, North-Western University Medical School. London: Baillière, Tindall, and Cox. 1912. (Med. 8vo, pp. 460; figs. 133. 15s. net.)

[3] *The Vertebrate Skeleton.* By S. H. Reynolds, M.A., Professor of Geology in the University of Bristol. Second edition. Cambridge University Press. 1913. (Demy 8vo, pp. 551; figs. 144. 15s. net.)

[4] *Pathfinders in Medicine.* By Victor Robinson. With a letter from Ernst Haeckel and an introduction by Abraham Jacobi. New York: Medical Review of Reviews. 1912. (Med. 8vo, pp. 317; 16 illustrations. 10s.)

Every page teems with interest and sparkles with vivacity and humour. The book, too, has real value as a contribution to the biographical history of medicine and science. The author has a style of his own, a style with great merits, and, some will think, obvious faults. It is a flamboyant style, with a tendency to rhapsody and floridity; but the unflagging vigour and eloquence help to atone for a few sins of taste. Professional books are apt to be timidly academic; it is quite a refreshing change, therefore, to meet with a medical writer whose erudition serves not for the mitigation but merely for the enrichment of his robust human quality, one who, by the exercise of a vivid imagination, breathes life into the dry records of the past. Here one may learn many facts that are apt to be forgotten with regard to the anticipation by great men of discoveries for which the world at large had centuries to wait; as, for example, how Galen, eighteen hundred years ago, noted that "those who sleep in the same bed with consumptives fall into consumption, also those who live long with them, eat and drink with them, or wear their clothes and linen"; or how Aretaeus of Cappadocia (so completely "the forgotten physician" that the date of his birth cannot otherwise be determined than as falling in one of the first three centuries of our era), by revealing in his writings his practice of auscultation, anticipated by at least fourteen centuries the discovery of Laënnec. Dr. Robinson has even a good word to say for Paracelsus; and indeed it is hard to refute the claim for immortality on behalf of the man who not only was the first to describe zinc and to insist on the therapeutic value of metals in general, but to whom we are indebted for the internal administration of mercury in syphilis. From the *Christianismi Restauratio* of Michael Servetus (a book which, by reason of its theological heterodoxy, excited the wrath of Calvin and so cost its author his life) Dr. Robinson quotes a remarkable passage describing the pulmonary circulation in clear and accurate language. "So effectually was the edition destroyed that Harvey knew not his true precursor." He quotes Realdus Columbus but not Servetus. Full of historical as well as of professional interest is the chapter on "Ambroise Paré, that quaint and delicious writer, "the surgeon of princes and the prince of surgeons," who, by his accidental discovery of the injurious results of the barbarous practice of cauterizing gunshot wounds with scalding oil, effected a revolution in their treatment. There can be few more vivid passages in the literature of our calling than that cited by Dr. Robinson in which Paré describes the horrors of the plague as witnessed by himself. That it is impossible for Dr. Robinson to be otherwise than entertaining is proved by the fact that his chapter on Henry Cavendish makes quite interesting reading. For surely no more methodical, emotionless, or unsocial being ever walked the earth than that eminent chemist, physicist and mathematician who weighed the planet, discovered hydrogen and demonstrated the composition of water. Among the "pathfinders" whose careers are discussed are "Scheele the Apothecary," "Hunter the Natural Philosopher," "Jenner and Vaccination," "Laënnec and Auscultation," "Simpson and Chloroform," Semmelweis, Schleiden, and Schwann. An eloquent panegyric upon "Darwin, Saint of Science," brings the book to a close. The dedication is to Ernst Haeckel, whose letter of acknowledgement is reproduced in facsimile. The author evidently belongs to the same school of thought.

BURDETT'S HOSPITALS AND CHARITIES.

IN the edition of *Burdett's Hospitals and Charities*[5] for 1913 the most novel chapter is one dealing with the interaction of the National Insurance Act and the hospitals. Sir HENRY BURDETT'S view, as we understand him, is that the Insurance Act was from the very beginning only workable thanks to the existence of the hospitals, that already they have done a great deal of work for the insured, and that as time goes on the demands made upon them are bound to increase because all panel medical officers will practically be acting as recruiting sergeants in regard to them. Taking the figures of the actuaries as to probable sickness on the one hand and the number of beds available in hospitals on the other, he thinks it likely that the insured will require for their use the majority of beds at present in existence. As the voluntary hospitals cannot be given up entirely to the insured, the accommodation, he holds, must somehow be supplemented and the voluntary hospitals at the same time relieved of the added expense thrown upon them. Not long ago, when it was desired to get over the evil of sleeping out on the Embankment, the Local Government Board took advantage of its special powers in relation to the metropolis and put the Metropolitan Asylums Board into a position to co-ordinate and control, with excellent effect, the whole of the agencies, official and unofficial, for dealing with casuals. When, again, beds for tuberculosis patients were required, there was plenty of accommodation in the institutions of the Metropolitan Asylums Board, but since the Act excluded Poor Law authorities from dealing with the tuberculous insured this accommodation could not be utilized as it stood. In this case the difficulty was got over by the London County Council making an arrangement with the Metropolitan Asylums Board by which it took over some of its institutions and placed them at the disposition of the London Insurance Committee. In framing a National Insurance Amendment Act a hint should be taken from these two facts. The amending Act Sir Henry Burdett considers should enable the Local Government Board to divest Poor Law infirmaries of such Poor Law character as they possess and throw them open to the insured, enable the Board and municipalities throughout the country to lend money to voluntary hospitals for building purposes at 3 per cent. interest, *plus* 1 per cent. by way of sinking fund, giving power at the same time to reimburse voluntary hospitals the actual *pro rata* cost of treating insured persons as in-patients. In these ways both the immediate and future needs created by the Insurance Act would, he argues, be met, and the hospital system of the country be perfected without any additional charge on the ratepayers, and without interference with the present status of voluntary institutions. The latter, as also complete co-ordination and co-operation of all existing agencies for the indoor treatment of the sick, he regards as essentials. The rest of the contents of this valuable reference book are on all-fours with those of its immediate predecessor, but, in regard to the future, a statement of interest is made in the introductory chapter. Sir Henry Burdett removed last year one of its very few blots by taking as the basis of his useful commentaries the same figures as those supplied in the general text, and in the next edition he proposes, it would appear, to recast the volume altogether, with the object of bringing it out, if possible, much earlier in the year and therefore much closer to the date to which the figures supplied for the most part relate. In this connexion he urges once more the desirability of all hospitals adopting the same financial year, and suggests that since very many institutions have already fallen into line in the matter there can be no insuperable difficulty in the way provided secretaries will undertake the trouble involved. Both these theses are absolutely sound.

[5] *Burdett's Hospitals and Charities, 1913.* By Sir Henry Burdett, K.C.B., K.C.V.O. London: The Scientific Press. 1913. (Cr. 8vo, pp. 976. 10s. 6d. net.)

NOTES ON BOOKS.

THERE are not many enterprises that, like Minerva, can boast that they sprang full grown from the head of their progenitors. The history of most human undertakings is one of obscure beginnings and constant struggles against difficulties and disappointments of every kind; and particularly is this the case with regard to philanthropic works that are dependent upon the goodwill and generosity of the public. Mr. B. BURFORD RAWLINGS, in his book *A Hospital in the Making*,[6] gives an interesting account of the modest beginnings of what is now the famous National Hospital for the Paralysed and Epileptic. Founded in 1860 by Mr. Edward Chandler and his sisters, whose sympathy for the helpless victims of paralysis had been aroused by the illness of a near relative, the work of the National Hospital was for some years carried on in a private house in Queen Square, which contained ten beds destined for persons of either sex suffering from paralysis and other affections of the nervous system. Small as it was, the new establishment was at that time the only

[6] *A Hospital in the Making.* A history of the National Hospital for the Paralysed and Epileptic (Albany Memorial), 1859-1901. By B. Burford Rawlings. Published by Sir Isaac Pitman and Sons, Ltd., 1, Amen Corner, London, E.C. 1913. (Pp. 271. 5s.)

hospital in England where such diseases were admitted; and Mr. Rawlings has traced its gradual growth and development from the day of its opening down to the year 1901, when his long connexion with it ceased. The book gives a vivid picture of the working of a large charitable institution; and incidentally shows the salutary change in public feeling in regard to the care of the sick poor, evinced by the higher standard of comfort and the increased and unremitting care for the welfare of hospital patients. But as a record of the development of an institution in which some of the greatest advances in medicine and surgery have been made it is less satisfactory. Anyone ignorant of the facts might easily gather that the "making" of the hospital was mainly the work of Mr. Burford Rawlings. Valuable as that work may have been in its own sphere, it cannot be too strongly insisted on that the economic and administrative management of a hospital is altogether secondary to the work of the medical staff. While the book may be accepted as a record of Mr. Burford Rawlings's association with the National Hospital for the Paralysed and Epileptic, it is a very inadequate history of an institution which the fame of its medical staff has made a Mecca of neurology, visited by scientific pilgrims from every part of the world.

MEDICINAL AND DIETETIC ARTICLES.

Soluble Salts of Acetyl-salicylic Acid.

WE have received from Mr. W. Martindale (10, New Cavendish Street, London, W.) samples of tylcalsin and tyllithin, which are respectively the calcium and lithium salts of acetyl-salicylic acid. Both are white powders having a slight sweetish taste and a faint acetous odour. They are very readily soluble in water, and their solutions rapidly undergo hydrolysis in the presence of alkali, showing salicylate in considerable quantity after a very short time. The advantage presented by these salts over acetyl-salicylic acid is, of course, their far greater solubility, favouring rapidity of action. They are supplied in 7½-grain tablets or in powder.

Standardized Thyroid Preparations.

A good deal of work has been done in recent years in the analysis of thyroid glands derived from sheep raised in different localities and killed at different times of the year. The results have revealed wide variations in the amount of iodine contained in the glands, and as the activity has been shown to be due to the organic compounds of iodine these differences are of serious importance. Standardization in accordance with the amount of organically combined iodine appears, therefore, to be a wise course. Mr. W. Martindale (10, New Cavendish Street, London, W.) has submitted a sample of liquor thyroidei standardized to contain 0.025 gram of iodine in organic combination per 100 c.cm., and also prepares the desiccated gland containing 0.2 per cent. of organic iodine, the latter being further supplied in the form of tablets of different strengths.

MEDICAL AND SURGICAL APPLIANCES.

A Portable Ward Screen.

COLONEL W. G. PRIDMORE, I.M.S., draws attention to a portable ward screen made to his design in Rangoon, and regarded at the general hospital in that city, where it is now in use, as a decided improvement on other appliances of like purpose. In its construction materials locally obtainable have been used, and found quite satisfactory. The skeleton of the screen consists of a frame of ¾-in. steel tubing, with the side bars 2 ft. 11½ in. apart, the top bar 5 ft. 1½ in. from the ground, and the bottom bar 14 in. from the ground. It is supported by bent segments of the same material, which, like the horizontal bars, are attached to the uprights by T-joints. The tubing forming these feet is filled with lead, so as to secure stability. The framing is coated with a uranium paint, which is easily renewable, and converted into a screen by drawing over it an envelope of white cotton. Strings and buttons are thus avoided, and provided the envelope is changed regularly the screen always has a clean, neat appearance. The bringing of several screens into close apposition when so desired is rendered possible by making one foot of each screen lower than its fellow, and lengthening the corresponding upright accordingly.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).

SUBSECTION OF CHEMICAL PATHOLOGY.

THE Subsection of Chemical Pathology has been constituted this year for the first time as a separate section apart from the Section of General Pathology. It will meet under the presidency of Dr. F. Gowland Hopkins, F.R.S. The meetings will be held in the Mechanical Theatre of the Royal College of Science, South Kensington.

Discussions.

On Thursday, August 7th, the subject for the morning discussion will be the pathological conditions due to defects of diet. The discussion will be opened by the President of the Subsection, who will be followed by Dr. H. Schaumann, of Hamburg.

On Friday, August 8th, a joint discussion will be held with the Section of Bacteriology and Immunity on the subject of cancer, the chemical aspects of which will be discussed by Professor Carl Neuberg, of Berlin, and Dr. E. Freund, of Vienna.

On Saturday, August 9th, the subject will be the clinical applications of pathological chemistry. The discussion will be opened by Professor Otto Folin, of Boston, U.S.A., and Dr. A. E. Garrod, of London.

On Monday, August 11th, Professor Otto Cohnheim, of Heidelberg, will open a discussion on the chemical pathology of the alimentary tract. Dr. G. Barger, of London, will speak next.

On Tuesday, August 12th, a joint discussion will be held with the Section of Physiology on the subject of the endogenous metabolism of proteins. Dr. E. Abderhalden, of Halle, and Dr. H. Dakin, of New York, will act as reporters on this subject.

The discussion on the subject of the clinical applications of pathological chemistry will, it is hoped, draw a large audience, as it is intended to bring forward many points in which chemical investigations have important bearings on diagnosis and treatment. The joint discussions also, with the Sections of Immunity and Physiology, will be of especial interest, as the subjects under discussion—cancer, and the endogenous metabolism of proteins respectively—will be approached from different points of view by the representatives of the respective sections.

The afternoons will be given up to the reading and discussion of independent papers. The number of papers at present submitted by English authors are few; further papers will therefore be acceptable. The titles must be sent as soon as possible to the central office. Among the subjects treated in the papers already received are the following:

The Recognition of Pancreatic Insufficiency.
The Ferments of the Gastric Juice in Carcinoma of the Stomach.
The Action of Light on Animal Chemistry.
The Ferments of the Blood in Normal and Pathological Conditions.
Sulphaemoglobinaemia.

It is proposed to have a Sectional dinner.

A Museum Subcommittee has been formed for the purpose of arranging for exhibits of interest from the point of view of Pathological Chemistry. Professor Walker Hall is Chairman and Dr. H. Maclean Acting Secretary. The exhibits will be shown in the General Museum.

The Secretary of the Section is Dr. J. F. Gaskell, 23, Ladbroke Grove, W., and Dr. G. Barger has undertaken the duties of Editor of the *Transactions* of the Section.

THE National League for Physical Education and Improvement has recently added to its series of health publications a new health poster and two health leaflets. The poster deals in a graphic manner with the evils arising from the use of push-carts for very young children, showing on the one side a young baby huddled up in a push-cart with the lower part of its body exposed to draughts and its chest contracted, and on the other side the same child undressed, with its spine much bent as the result of the use of these cheap instruments of torture. The poster is printed on stout manilla paper in life colours, from a design by the Nurses' Social Union. One of the leaflets deals with the hygiene of a bedroom such as a village mother would have, and explains in the simplest language what should be done in order to keep such rooms healthy. The other leaflet is on "Food and Drink," and is equally suitable for distribution by health or district visitors, or in schools where domestic economy and hygiene is taught.

THE PROGRESS OF CREMATION.

THE *Transactions* of the Cremation Society of England (No. XXVI), recently issued, contains the report of the council of the society for 1912. It states that during the year ended December 31st, 1912, 125 cremations were carried out at the society's crematorium near Woking, as compared with 114 in 1911. With two trifling exceptions there has been an increase at each of the crematoriums in Great Britain during the past year. The total number of cremations in 1912 in Great Britain was 1,134, as compared with 1,023 for 1911. Of this total 591 took place at Golder's Green. The appended table gives the figures for Great Britain during the last twenty-eight years.

Annual Meeting of Society.

At the annual general meeting of members of the society, Sir Charles Cameron, President, who was in the chair, in moving the adoption of the report, said that the movement was progressing in Great Britain steadily, though by no means so rapidly as he would like. The progress made was shown by the fact that during the eleven years that elapsed between the opening of Woking Crematorium in 1885—the first establishment in this country—and that of the fourth, which was opened at Liverpool in 1896—those at Manchester (1892) and Glasgow (1895) being the second and third respectively—the number of cremations in Great Britain was less by 62 than the total for the twelve months of last year. In the thirteen years from 1896 nine other crematories had come into existence, and 11,118 bodies had been burnt. The number of cremations in each ensuing year had surpassed that of most of the preceding ones, and last year's figure of 1,134 accounted for more than a tenth of the aggregate number during the twenty-eight years the society had been in existence. Since 1904 the annual number of cremations in Great Britain had doubled. So far as they had been received, the figures for 1913 showed an increase over those of 1912, and should the movement continue to progress in the future as it had done in the past, as there was every prospect it would, the present generation might hope to see the practical fruit of the society's work in the solution—at least to a very large extent—of the problem which every generation found more difficult, where to find ground for the burial of the nation's dead. Sir Charles Cameron went on to say that, although cremation had been legalized in Prussia only within the last two years, the number of cremations in that country was close on 9,000. Making allowance for the difference of population, the number of cremations per 100,000 inhabitants was about three times as great in Germany as in this country; and the present rate of progress in Germany might be judged by the fact that the number of cremations in 1912 exceeded that of 1911 by over 1,300—a figure larger than the entire number of cremations in Great Britain in the last and busiest year of the society. The statistics for the United States were incomplete, but, according to the latest information available, the number of cremations there last year amounted to between 7,000 and 8,000. But the most practical recognition of the advantages of that mode of disposal of the dead was at St. Gall in Switzerland, a town of some 20,000 or 25,000 inhabitants, where the municipality had provided facilities for cremation, and would only allow the ashes of cremated persons to be interred within its jurisdiction. The fact that there were 201 cremations at St. Gall in 1912, which would represent a death-rate of some 13 per 1,000, would indicate that the number still clinging to earth burial must be very inconsiderable. It was plain, therefore, that the cremation movement had commended itself to every section of the community. He had no information how far this was the case throughout Germany, but in certain districts it certainly held good to a very great extent. Thus in Possneck, a small town in Saxe-Meiningen, in 1912, out of 123 adults deceased, 62, or over 50 per cent., were cremated. In this country, on the other hand, the adoption of the method had hitherto for the most part been confined to the more highly educated section of the population. Among those whose bodies were cremated at Golder's Green during 1912 were the late Bishop of Truro, Sir Frederick Wallis, Sir Henry Butlin, Mr. John Troutbeck (coroner for Westminster), Lady Rendel, Mrs. Lecky, and Sir John Tollemache Sinclair. [It may be added that quite recently the remains of Lady Dorothy Nevill, Lord Ashbourne, and Mr. Alfred Austin, the poet laureate, were cremated there. The remains of Lord Rendel were cremated the other day at Woking.] But the prejudice among the poorer section of the population seemed at last to be giving way, and among the bodies cremated at Golder's Green and Woking in 1912 were those of over a score of working men.

Cremation Abroad.

The following facts, which are given in the *Transactions* of the Cremation Society of England, bring up to date the information given in the BRITISH MEDICAL JOURNAL of February 23rd, 1911, and April 27th, 1912:

Germany: Five new crematoriums were opened in 1912—at Berlin, Frankfort-on-the-Main, Hagen, Wiesbaden, and Munich. The Municipality of Freiburg in Baden has sanctioned the erection of a crematory. The total number in operation in the German Empire is 34. The number of cremations during 1912 was 8,858, and the total number cremated since the opening of the first crematorium at Gotha in 1879 to December 31st, 1912, was 46,387. *France:* There are crematoriums at Paris, Père Lachaise, Lyons, Marseilles, Rheims, and Rouen. *Switzerland:* There are ten—at Zurich, Basle, Geneva, St. Gall, Bern, Lausanne, Chaux de Fonds, Winterthour, Bienne, Aarau. The total number cremated from 1889, when the Zurich crematorium was opened, to 1912 was 9,332. *Italy:* There are crematoriums in operation at Asti, Alessandria, Bra, Bologna,

Table of Cremations carried out in Great Britain since the opening of Woking Crematorium in 1885.

	1885-9.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Total.
Woking	100	54	99	104	101	125	150	137	173	240	240	301	273	275	*143	138	95	140	108	119	105	106	114	125	3,565
Manchester	...	...	...	3	30	47	58	52	51	62	88	83	96	81	92	98	97	90	98	116	106	114	124	149	1,735
Glasgow	...	...	...	...	...	...	1	10	16	12	16	20	18	20	24	19	35	44	30	28	30	28	39	44	434
Liverpool	...	...	...	...	...	...	...	2	10	27	23	40	40	54	35	40	35	46	34	32	46	37	50	52	603
Hull	...	...	...	...	...	...	...	...	...	...	...	...	17	13	18	20	15	17	29	37	15	21	25	27	254
Darlington	...	...	...	...	...	...	...	...	...	...	...	...	1	2	1	7	4	13	8	6	9	9	12	15	87
Golder's Green ...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	158	220	252	298	290	364	421	415	542	591	3,556
Leicester	...	...	...	...	...	...	...	...	...	...	...	...	...	1	5	8	16	12	12	14	19	16	13	14	130
Birmingham	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	19	22	25	33	18	30	38	44	40	270
Leeds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	15	16	24	19	12	17	25	143
Ilford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	23	18	19	24	22	20	32	167
Bradford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	14	13	6	13	14	13	9	83
Sheffield	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	6	18	12	18	8	10	12	91
Total	100	54	99	107	131	172	209	201	250	341	367	444	445	451	477	569	604	743	707	795	855	840	1023	1,134	11,118

*Golder's Green Crematorium in operation.

Brescia, Como, Cremona, Florence, Genoa, Leghorn, Lodi, Milan, Modena, Mantua, Novara, Padua, Pisa, Pistoia, Perugia, Rome, Siena, Spezia, San Remo, Turin, Udine, Verona, Varese, and Venice. *Scandinavia:* There are crematories at Stockholm and Gothenburg in Sweden, at Bergen and Christiania in Norway, and at Copenhagen in Denmark. *Belgium:* Cremation is not yet legalized, but an active propaganda is carried on with that object. *North America:* There are 44 crematoriums—43 in the States and 1 in Canada. In 1902 there were 30 in the States, and in that year there were 3,200 cremations. From the latest statistics available about 7,250 were carried out in 1912, and the total number since the opening of the first crematorium in 1876 is now more than 65,000. *South America:* Crematories exist or are in course of construction at Rio de Janeiro, Buenos Aires, and Montevideo. *Asia:* Setting aside India, Siam, Tibet, and Japan, where cremation is the customary way of disposing of the dead, a crematorium for the special use of Europeans has been established at Calcutta, and one in Shanghai. *Australia:* A crematorium was established in Adelaide in 1903, and a society has been formed in New South Wales for the purpose of establishing one in Sydney. *New Zealand:* The City Council of Wellington has erected a crematorium, and the Auckland Cremation Society is urging the council of that city to establish one. *South Africa:* A movement has been set on foot for the establishment of a cremation society in South Africa, with a view to the erection of crematoriums at Cape Town and Johannesburg.

OPENING OF EXTENSIONS TO HARROGATE SPA ESTABLISHMENTS.

HARROGATE has long been favourably known to the medical profession as a well-organized and enterprising health resort which is never content to rest on its laurels. Considerable extensions of its bathing facilities have recently been made, and on Saturday, June 7th, these were formally opened by Sir David Burnett, Lord Mayor of London, who visited Harrogate in civic state. The Corporation of Harrogate, acting in conjunction with the Harrogate Medical Society and the Great Northern and North-Eastern Railway Companies, invited a large number of prominent members of the medical profession to be their guests over the week-end, and all concerned in the arrangements are to be congratulated on the thoughtful way in which everything was devised for the comfort of the guests, and the almost royal hospitality which was shown. A special train conveyed the Lord Mayor, the Lady Mayoress, the Sheriffs of the City of London, Alderman Sir Thomas Crosby, M.D., LL.D., and several other members of the civic party, and a number of London medical men to Harrogate. On arrival the guests were distributed among the principal hotels of the town, the Lord Mayor and Sheriffs being housed at the Queen Hotel, and a large medical contingent at the Majestic.

The extensions opened on Saturday were a new Pump Room joining the Royal Pump Room, better known as the "Old Sulphur Well." This new building has been found necessary to accommodate the large number of visitors using this water, the average number of drinkers before nine in the morning last season being about 2,700. The extension more than doubles the old area of the Royal Pump Room, and forms a cheerful and comfortable promenade. Extensions have also been made to the Victoria Baths, once the chief bathing establishment of the town; this, though supplemented in 1897 by the Royal Baths, to which additions were made at great expense so recently as 1910, has been found to be inadequate to meet the needs of the rapidly increasing number of bathers. A new wing has been added to the Prince of Wales Bath at Starbeck, and an important addition has been made to the amenities of the town, as well as to its wealth of mineral springs, by the acquisition by the Corporation of the Harlow Car estate, which consists of an hotel, a suite of baths, and seven mineral springs. This estate is to be developed on Continental spa lines, and no doubt in the near future will be found richly to repay the sagacious enterprise of the Corporation and testify to the administrative capacity of Mr. Henry J. Buckland.

The opening ceremony, performed by the Lord Mayor, was a most picturesque event. The civic party in full state arrived at the Royal Baths, where a large body of the public was in waiting. The streets on the route were gaily decorated. Amongst those on the platform were the Bishop of Ripon, Lord Faber, the Hon. Edward Wood, M.P. for the division, and many other distinguished people, but the gathering of Yorkshire Lord Mayors and Mayors was probably unique. Almost, if not quite, all of the heads of the municipalities in Yorkshire were there, a fact to which the Mayor of Harrogate (Mr. J. S. Rowntree) referred with pardonable pride; and a typical Yorkshire assembly they formed, radiating an air of justifiable satisfaction with their county, their hosts, and the towns which they represented, which was pleasantly characteristic of the proceedings of the week-end. Yorkshire is quite convinced that it is the greatest county in England—not only in size—and the municipal fathers on the platform were there to emphasize the fact that Harrogate, in showing the world what a watering-place should be, was proving herself worthy of the county. The ceremony was commendably short, the main item, apart from the ceremonial opening of the extensions, being a concise and business-like statement by Mr. Councillor Sheffield, Chairman of the Spa Establishments, showing the marvellous progress of the institutions under his care. He made a claim which was amply verified by the visitors afterwards—namely, that Harrogate was second to no spa in the world, either in the amplitude of its natural resources or in the ability and courage with which it had utilized and developed them. After tea the medical visitors were shown over the various bathing establishments, and the completeness of the arrangements made a great impression on those to whom Harrogate was previously unknown, except by repute. A mere list of the various kinds of baths is bewildering. Harrogate has over eighty different kinds of springs, of which all but sixteen are used for bathing purposes. It is mainly through its sulphur waters that Harrogate has become famous, but to the various combinations of sulphur baths the management has added all kinds of massage, inunction, electric light, and mechanical treatments. Peat is brought from the Yorkshire moors, brine from Cleveland, and, in short, there seems to be hardly any form of therapy known to bathing establishments of this kind which cannot be supplied at Harrogate, and supplied in comfort. It is probably true to say, with small reservations, that the medical man can obtain at Harrogate for his patients all the therapeutic advantages offered by Continental spas, combined with beautiful surroundings and a most invigorating air. Full particulars of the different forms of treatment available at Harrogate can be obtained from the general manager, Mr. Buckland. Harrogate also possesses very fine hotels, probably as good as can be found anywhere, and boarding-houses to suit almost every purse.

On Saturday evening the guests of the Corporation were entertained to dinner in the Majestic Hotel, and over 300 guests sat down. This large number was easily accommodated in the fine dining-room, the only difficulty, and one inseparable from such a vast room, being a little trouble in hearing some of the speakers. The MAYOR OF HARROGATE was supported by the Lord Mayor of London, by the Lord Mayors of York, Leeds, and Bradford, and the Mayors of the Yorkshire boroughs. Amongst the prominent representatives of the medical profession were Sir James Barr (President of the British Medical Association), Sir James Crichton-Browne, Sir Alexander Dempsey, Sir John Moore, Sir C. Nixon, and Sir Peter O'Connell.

Sir JAMES BARR proposed the health of the Lord Mayor, Aldermen, Sheriffs, and Corporation of London, to which the LORD MAYOR responded in very happy vein. Sir J. CRICHTON-BROWNE proposed "The Harrogate Medical Society" with his usual skill and glowing rhetoric, mentioning the names of some of the well-known Harrogate physicians of earlier times. His story of the Irish doctor who had difficulty in naming the diseases from which his patients were suffering deserves reproduction. The doctor adopted the method of using the titles of George Meredith's books. A patient who was suffering from appendicitis was told he had "Diana of the Crossways"; indigestion was christened "Sandra Belloni"; while alopecia was designated "The Shaving of Shagpat." Dr. CAMPBELL BOYD, President of the Society, in response, made a witty reply, which was received with great applause. The toast of "The Guests" was proposed by Lord FABER, and responded to by that wonderful octogenarian, Sir THOMAS CROSBY, whose voice was distinctly heard all over the room. Mr. SPENCER LEIGH HUGHES, M.P., a noted after-dinner speaker, who also responded, lived well up to his reputation, and kept his audience in a continual chuckle. An excellent dinner and a well-planned

toast list were brought to an end by the toast of "The Mayor and Harrogate Spa," moved by Alderman Sir CHARLES WAKEFIELD and responded to by the MAYOR, who must be heartily congratulated on this as well as on the other items of the week-end's programme in which he took part. The visitors then proceeded to the Kursaal, which, with characteristic Yorkshire absence of mock modesty, boldly proclaims outside, its claim to be "the handsomest concert hall in England"—and certainly does not belie the claim inside. The Kursaal Orchestra, under the leadership of Mr. Julian Clifford, is too well known as one of the finest orchestras in the country to need any praise here.

On Sunday morning the civic party went to church, and afterwards paid a private visit to the bathing establishment. In the afternoon the whole party was taken in motor cars to Fountains Abbey and Ripon, and was thus given an opportunity to judge for themselves of another of Harrogate's claims—namely, that it is a beautiful town set amidst some of the most beautiful scenery in this or any other country, and, judging by the freely expressed admiration of the party, the patriotic Yorkshiremen will have no reason to quarrel with the verdict. After tea at the Ripon Hydropathic the guests were motored back to Harrogate, and those of the London party who were not staying overnight were brought to the station and left at 6.30 in the special train, in which dinner was served. All concerned—the Corporation of Harrogate, the Harrogate Medical Society, and the Great Northern and North-Eastern Railways—have every reason to congratulate themselves on the success of the whole affair. Harrogate looked its best, the welcome of the people was warm, the hospitality was worthy of the county—we cannot say more; the natural and other advantages of Harrogate from a holiday and medical point of view were brought fully home to the visitors, and everything went, so far as one could see, without a hitch. Special thanks are due to Dr. Shepherd Boyd, President of the Harrogate Medical Society, and to Mr. Buckland, manager of the baths. It is not difficult to understand Harrogate's continued and well-deserved success as a health resort when the irresistible combination of a fine town possessing many natural advantages with an enterprising corporation, a medical faculty ready to make the best use of all therapeutic facilities, and a manager always ready to meet all demands upon the bathing arrangements, are taken into consideration.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

THE FOOD AND DRUGS ACTS AND SECRET REMEDIES.

ON June 5th evidence was given on behalf of the Local Government Board by Dr. A. W. J. MacFadden, Chief Inspector of Foods under the Board. He explained the relation of the Board to the work of public analysts throughout the country, and mentioned that the Board had received representations in favour of the removal of the exemption of proprietary medicines from the operation of Section 6 of the Food and Drugs Act. His view was that control of proprietary medicines could not be secured by that means unless the Sale of Food and Drugs Acts were extended to require full declaration of the nature and amount of the ingredients, the declaration having the force of a warranty. Without expressing an opinion as to the desirability of requiring such a declaration, he pointed out that it would require troublesome and costly analytical work. As to the proposal, made by several witnesses, to secure a more limited control in regard to certain dangerous or potent drugs in proprietary medicines, it would require the amendment of the Sale of Food and Drugs Acts to provide for a statement on the label of the name and dose of the drug, to constitute such a label a warranty and to punish any breach with a substantial penalty. The witness outlined the provisions of the United States law as regards "misbranding" and of the West Australian Health Act, 1911, for controlling false declarations. If any legislation on similar lines were contemplated for this country, he did not think it would be practicable to provide it by means of extensions of the Sale of Food and Drugs Acts, because these measures placed responsibility primarily on local authorities. It would be necessary in the case under discussion for owners of proprietary articles to submit their advertisements and labels to a central authority. Such a scheme would not be without difficulty, and it would involve a form of censorship similar to that exercised in Australia and the United States.

In reply to the Chairman, the witness said that the Sale of Food and Drugs Acts affected the proprietary medicine trade very little, and no extension could make them applicable. It would be necessary for Parliament to make a fresh start, and create a new body with new powers.

Questioned by various members of the Committee as to the West Australian law, the witness agreed that its provisions, which he thought admirable, might not be applicable to this country.

At the invitation of the Chairman, Dr. MacFadden outlined his personal views as to a method of regulating the trade in proprietary medicines. He would set up a censorship of labels and advertisements, not to deal with all advertisements and other announcements, but with those brought to the notice of the authorities. On the censorship committee the General Medical Council and the Pharmaceutical Society would be represented. It would be necessary for the Committee to have the maker's formula before it; this might be disclosed obligatorily but in confidence. He would give the Committee power to prohibit sale until the statements accompanying a proprietary medicine were such as the Committee could approve.

SUGGESTED ALTERATIONS IN THE LAW.

Mr. Guy Stephenson, Assistant Director of Public Prosecutions, who gave evidence at an earlier stage of the inquiry (BRITISH MEDICAL JOURNAL, June 15th, 1912, p. 1373), was recalled. He said that since he was last before the Committee he had considered the law as to proprietary articles, and, after discussing the question with Sir Charles Mathews, the Director of Public Prosecutions, he was prepared to put forward some suggestions for the alteration of the law. It might be possible to set up by legislation machinery similar to that provided by the Food and Drugs Acts. He suggested that a staff of inspectors or other officials might be created by statute; it would be their duty to be on the look-out for offences with regard to proprietary medicines, and to make a search of the files of newspapers with a view of finding any advertisements of an undesirable character. The inspectors would also purchase medicines and submit them to an analyst. He did not think this suggestion could be carried out without an alteration of the law making the vendor liable, quite apart from his knowledge of the contents of a medicine. To be effective the statement on the label of the formula of a proprietary medicine, as suggested by the British Medical Association, would have to be couched in popular language. As to the proposal to make the label a warranty, the witness remarked that, from a legal point of view, the question what was and what was not a warranty was very difficult to define.

In reply to questions, the witness reiterated his opinion that entirely new legislation was necessary to deal with the traffic in proprietary medicines. The onus of proof must be thrown on the vendor; he would have to show that he had reasonable belief in the efficacy of his preparation.

DR. GEORGE TEMPLETON, an account of whose death in the Hardanger Glacier, Norway, was published in the BRITISH MEDICAL JOURNAL of April 19th, left estate of the gross value of £9,429, of which the net personalty has been sworn at £9,262.

A "Travel Study Tour" of American Physicians to the Seventeenth International Congress of Medicine will start from New York on July 3rd. About seventy-five doctors will take part in the tour. In co-operation with the International Committee for post-graduate medical education, arrangements have been made for visiting clinics and hospitals in Paris, Munich, Vienna, Berlin, Dresden, Cologne, Brussels, and elsewhere, and for inspecting the health resorts of Carlsbad, Marienbad, Nauheim, Wiesbaden, and Homburg. The tour will end in London, where the travellers will arrive in time to attend the International Medical Congress.

AN EPIDEMIC CHARACTERIZED BY ADENITIS, TONSILLITIS, AND CARDIAC COMPLICATIONS.

A CORRESPONDENT sends us the following account of an epidemic which has occurred in an institution to which he is medical officer. The disorder is, he believes, of a novel type. He writes:

The most obvious, though not the most important, feature of the disease is the swelling of the lymphatic glands in the neck, and their exceptional tenderness, causing in most cases a noticeable stiffness of the neck. The glands affected are chiefly those behind and beneath the jaw and in the anterior triangle of the neck, with very occasionally implication of the salivary glands. These lymphatic glands are sometimes so enlarged that they simulate a severe case of mumps. Associated with this is a condition of the tonsil which varies from a slight rash to an apparently pronounced and extensive diphtheritic membrane.

There is no apparent connexion between the severity of the throat trouble and the extent or the tenderness of the enlarged glands in the neck.

In three of my cases the trouble was in the larynx, and not obvious in the tonsils. In these, hoarseness and an irritating cough took the place of pain on swallowing.

In two cases there was a doubtful mottling of the neck and upper chest, which at the time I thought might be the precursor of the rash of scarlatina or German measles. In each case the mottling faded away within two hours.

One case developed orchitis, a painless, not very tender swelling of the body of the testis.

Two developed great swelling and induration of one tonsil and palate (though both tonsils were affected), pushing the faucial opening well over to the other side and almost obliterating it. There was a very small amount of deep-seated pus in these swellings. Several of the patients complained of the discomfort caused by the oedematous and greatly elongated uvula. I have been told about, but have not seen, cases of extensive cellulitis of the head and neck, with deep-seated suppuration in the neck.

About three-fourths of the cases were mild, with slight symptoms and no appreciable rise of temperature. The most dangerous cases commenced with trivial symptoms in the throat and neck—two of them with headache and high temperature, the others with scarcely any rise of temperature and no headache—so that I have come to look upon greatly inflamed tonsils and glands as rather favourable signs except for the local disturbance which they may cause.

In one case the patient had rigors with axillary temperatures of 106.4° F., 106.6°, 105.6°, 105°. He also had haemorrhage from the nose and lower bowels, and incontinence of urine. An examination of the blood showed streptococci. He is being inoculated with a vaccine made from his blood by my colleague.

Three other cases (and a possible fourth which may not have been this disease) developed heart mischief. The condition of each was the same, but of a different type to anything I have seen before. In each case there were no symptoms to call attention to the heart, and the patients were convalescent. But for the fact that, realizing the toxic nature of the disease, I was carefully examining all hearts every night and morning, I should never have noticed the insidious commencement. First there was the slightest possible *ff–ff* at one of the valves, followed a few hours later by a marked murmur. Two days later there were loud murmurs over the aortic and mitral regions and the heart was dilated, the apex having moved about ¾ in. to the left. It was more difficult to say what valve or surrounding myocardium was not affected than to say what was, so rapid and so extensive was the infective process. During the whole process the temperature remained subnormal, and the patients in two of the cases seemed unaware that anything particular had happened to them. Apparently the myocardium is affected in all except the slightest cases of this disease, for there is often unaccountable weakness for weeks after all other symptoms have disappeared.

None of the patients had sugar in the urine, and none had albumen, except that those with high temperatures had a small amount temporarily, and a distinct amount appeared in one who became insane. About half the cases had been in contact with previous cases; in the other half I was unable to satisfy myself as to the source of infection. In the case of those who had been in contact the period of incubation appeared to be about four days.

I have treated between 40 and 50 cases, but I did not recognize the nature of the disease in the case of the first ten or twelve; I imagined them to be cases of mixed infection. It was not until a colleague pointed out to me the definite grouping of symptoms in his own cases that I saw I had been mistaken, and realized that he was correct in considering the disease to be a new one.

It is not the mortality of the disease, which appears to be low, but the insidious nature of the heart affection, that inclines me to look upon this complication as an especially dangerous one, and one against which every practitioner should be on his guard.

AUTOMOBILES FOR MEDICAL MEN.

THE "G.R. CAR."

WE recently had an opportunity of testing the G.R. car over a fifty mile very hilly route, and, on the basis of the experience gained in this and other ways, feel justified in believing that the car would be found to meet admirably the needs of medical practice. Though known as the Georges Richard or "G.R. car," it might, but for trade considerations, be equally well called a Unic, for its chassis is built throughout at Puteaux by the makers of the Unic, and on the same lines. The only difference seems to be that the Unic cars, which have long had an excellent reputation for durability, are for the most part larger cars, and of greater horse-power. Avoiding as far as possible purely technical details, which any one can obtain for himself from the pamphlet relating to this car, and into which we have not space to enter, it may be said that the Georges Richard is a 10 to 12 h.p. four-cylinder car, which was found to travel exceedingly smoothly at rates shown by the speedometer to range from five to over forty miles an hour. The engine performed its work very quietly, this being no doubt largely due to the valve lifters, though easily adjustable, being enclosed by a plate, and the various gears engaged with marked freedom from jar (the leather below the male portion of the clutch is fitted with laminated springs). Equally notable was the ease with which different rates of progress could be secured solely through the operation of the throttle, thanks largely, no doubt, to the excellence of the carburetter. There was indirect evidence of this in the appearance of the tyres of the car tested; they were ordinary Michelin tyres, which had not, we were assured, been changed since the car commenced the 4,600 miles shown by the speedometer to have been run, yet were in a condition very much better than could have been the case had frequent resort to the brakes been needed. As for cost, though there is nothing "cheap" about this car, its price, considering all things, is quite low. The chassis alone (including wire wheels with Captain detachable rims, plain tyres, and a kit of tools) costs £235, while fitted with a three-seat coupé body the price is £330. This body opens and closes easily, and provides ready access to the seat of the person who is driving. Other bodies obtainable are a two-seater (£300), and a four-seater torpedo body (£320). They are made in this country to the order of the concessionaires of the G.R. car, Messrs. Mann and Overton, 10, Lower Grosvenor Place, S.W., who have a branch at Whitworth Street, Manchester. A good many Unic cars, it may be noted, are running in London as taxicabs, and there is reason to believe that their average petrol consumption is low.

AUTO-CYCLES.

The Motosacoche Company informs us that of its two machines, the one which it principally recommends to medical men is the 2½-h.p. car. It is a light weight machine, built not with a view to racing but to reliability, the protection of the rider from dirt, ease of control, and a minimum of expense on running and upkeep. In regard to these points it is stated that from 130 to 140 miles can be run on a single gallon of petrol, while the engine and all oily parts are so covered that the wearing of any special costume is superfluous: even trouser clips are not absolutely necessary. There is nothing gymnastic in the method of mounting, and, thanks to the sim-

plicity of the mechanism, any one who can ride an ordinary cycle can ride a Motosacoche forthwith. It is made with a special variable gear which, being operated not by the hand but by the foot, allows rates of speed from walking speed upwards being secured. Other points on which emphasis is laid are silence, capacity for hill mounting, and obviation of the risk of being delayed when called to start suddenly upon an unexpected journey by the provision of an appliance for dropping petrol direct into the cylinders when the engine is cold; this can be done without soiling the hands. These claims, judging from a communication from a member of the Association some time ago and from letters from medical men in the firm's possession, seem well founded. The price of the ordinary machine is £38, or £42 when provided with the variable gear here mentioned. It may be added that the Motosacoche has been a winner of medals, competitions, and trials of the reliability order ever since 1907. The address of the firm for letters is College Park, Willesden Junction, N.W.

THE DE DION BOUTON CARS.

Under the title of *The Doctor and the Car* Messrs. De Dion Bouton, of Great Marlborough Street, have brought out a booklet setting forth the general advantages in practice of using cars in place of horse-driven vehicles, and concluding with copies of detailed accounts of the expenses supplied by a large number of medical users of De Dion cars. These accounts are of distinct interest both to those who already use automobiles and to those who are wondering whether they can afford the expense. Most of these relate to small cars, which, as made by Messrs. De Dion, early won so much popularity.

The demand for such cars still continues, but side by side there would appear to be arising a corresponding demand for more expensive vehicles with numerous cylinders; indeed, the firm is now marketing a chassis with eight cylinders. A booklet relating to the latter can be obtained on application, as also one containing much testimony to the satisfaction given by the "DX" model put upon the market at the end of last year. The latter is a four-cylinder car, of 66 mm. bore and 120 mm. stroke. The chassis as it is being built this year keeps the frame rather higher from the ground than did the 1912 model, and provides more ground clearance; and the frame, too, is somewhat longer. The price of this chassis is £283. Of the eight-cylinder cars there are three models, two being of 26 h.p., and one of 50 h.p. Their prices run from £475 to £650. It is now generally admitted that six cylinders are an advantage, and it is claimed that these eight-cylinder cars are even smoother in torque than the best of sixes. In any case the literature concerning them is worth perusal.

A MOTOR CAR AT WORK.

At Brooklands, on May 19th, a new fourteen hours speed record was created by a standard 15.8-h.p. Argyll car, single sleeve valve engined, fitted with worm driven rear axle. The car covered 1,016 miles in fourteen hours, at an average speed of 72.57 miles an hour. The company send us some curious calculations, which may interest those arithmetically inclined, and certainly give a striking general impression of the high pitch of mechanical and structural perfection to which motor cars have been brought. We are told that the engine turned at the rate of 40 revolutions a second, or 2,400 revolutions a minute, for the fourteen hours, making altogether over 2,000,000 revolutions during the period; each piston travelled the length of the cylinder 80 times a second, equal to over 34 ft. a second. During each second of the fourteen hours of the run 80 charges of petrol gas were drawn into the engine cylinders, exploded, and exhausted.

THE British Fire Prevention Committee has established the nucleus of a technical library, which is to be known as the International Fire Library. It already has some 2,000 books, dealing specifically with matters of fire prevention, fire service, and fire loss, and desires to call attention to the fact that it will be glad to receive any books, pamphlets, or reports bearing on the subject, which authors, public authorities, publishers or collectors may be able to spare. They should be addressed to the Honorary Chief Librarian, the International Fire Library, 8, Waterloo Place, S.W. The same body has also recently issued another of its red books relating to fire tests with textile fabrics. It refers to experiments with a flame-proofing solution known as Snowdon's. This solution was found to have no injurious effect upon the textiles with which experiments were conducted, and to render them thoroughly flame-resisting. Its utility, however, so far as wearing garments are concerned, is seriously limited by the fact that the solution must be reapplied each time the garments are washed.

LITERARY NOTES.

IT is announced that Messrs. Constable are about to publish a work entitled *The Unexpurgated Case against Woman Suffrage*, by Sir Almroth Wright, F.R.S. The book is said to be written with the object of showing "that the Woman's Suffrage Movement has no real intellectual or moral sanction, and that there are very weighty reasons why the suffrage should not be conceded to women." As an addendum to the book is printed Sir Almroth Wright's letter on "Militant Hysteria" which appeared in the *Times*.

Dr. Francis J. Hall, of the Peking Union Medical College, is preparing for publication a second Chinese edition of Sir William Osler's *Practice of Medicine*.

At the Aberdeen graduates' dinner, a brief account of which appeared in the JOURNAL of June 7th, Mr. Cantlie recited the following verses in honour of the Chairman, Professor W. J. R. Simpson:

His heart's in the Tropics, his hopes they are high,
His heart's in Uganda a-chasing the fly.
The rat and the flea, in vain do they try
Tae plague us wi' sickness when Simpson is nigh.

At his presence the tsetse-fly skunks in the tree,
The trypanosome trembles sae frichtened is he.
O' the comma bacillus a full stop he's made,
An' na longer we fear for a cholera raid.

Wi' his heart in his wark an' his pen in his han'
Oh! ne'er was made a mair glorious stan',
Fer Simpson has fought in lands overseas
Tae shield oor compatriots frae plague an' disease.

Sae fare ye weel, oor laddie, God's speed on yer track
We'll look after yer little anes until ye come back,
And may be we'll see til't whan ye're far away
That the C.M.G. ye earned shall be fronted wi' "K."

In the JOURNAL of May 31st we quoted an epitaph on Lockyer, described by Mr. E. V. Lucas as "the Cockle and Holloway, Beecham and Carter of his time—the middle of the seventeenth century." In *Nugae Chirurgicae, a Biographical Miscellany, illustrative of a collection of professional portraits*, by William Wadd, Surgeon Extraordinary to George IV, the following concluding lines are given:

This verse is lost: his Pills embalm him safe
To future times, without an Epitaph.

We take this opportunity of correcting a misprint in the first line as cited by Mr. Lucas and reproduced in the JOURNAL, where "Pith" should be "Pills." Lionel Lockyer died in 1672. Under a bust of him, sculptured by J. Sturt, appear the following lines:

The true Effigies here you may behold
Of him, who, for preventing others' ill,
Hath gained a Medicine far exceeding Gold,
And known to all the world for Lockyer's Pill.

In reference to an article entitled Francis Bacon on Medicine, which appeared in the BRITISH MEDICAL JOURNAL of April 26th, p. 896, Dr. W. J. Rutherford (Renfrew) has sent us an extract from Macaulay's essay in which the subject is dealt with from a somewhat different point of view. Comparing the philosophy of Bacon with that of Plato, Macaulay says:

It is curious to observe how differently these great men estimated the value of every kind of knowledge. . . . To Plato, the science of medicine appeared to be of very disputable advantage (*Republic*, Book 3). He did not indeed object to quick cures for acute disorders, or for injuries produced by accidents. But the art which resists the slow sap of a chronic disease, which repairs frames enervated by lust, swollen by gluttony, or inflamed by wine, which encourages sensuality by mitigating the natural punishment of the sensualist, and prolongs existence when the intellect has ceased to retain its entire energy, had no share of his esteem. A life protracted by medical skill he pronounced to be a long death. The exercise of the art of medicine ought, he said, to be tolerated so far as that art may serve to cure the occasional distempers of men whose constitutions are good. As to those who have bad constitutions, let them die; and the sooner the better. Such men are unfit for war, for magistracy, for the management of their domestic affairs, for severe study and speculation. If they engage in any vigorous mental exercise, they are troubled with giddiness and fulness of the head, all of which they lay to the account of philosophy. The best thing that can happen to such wretches is to have done with life at once. He quotes mythical authority in support of this doctrine; and reminds his disciples that the practice of the sons of Aesculapius, as described by Homer, extended only to the cure of external injuries.

Far different was the philosophy of Bacon. Of all the

sciences, that which he seems to have regarded with the greatest interest was the science which, in Plato's opinion, would not be tolerated in a well regulated community. To make men perfect was no part of Bacon's plan. His humble aim was to make imperfect men comfortable. The beneficence of his philosophy resembled the beneficence of the common Father, whose sun rises on the evil and the good, whose rain descends for the just and the unjust. In Plato's opinion man was made for philosophy; in Bacon's opinion philosophy was made for man; it was a means to an end; and that end was to increase the pleasures and to mitigate the pains of millions who are not and cannot be philosophers. That a valetudinarian who took great pleasure in being wheeled along his terrace, who relished his boiled chicken and his weak wine and water, and who enjoyed a hearty laugh over the Queen of Navarre's tales, should be treated as *caput lupinum* because he could not read the Timaeus without a headache, was a notion which the humane spirit of the English school of wisdom altogether rejected. Bacon would not have thought it beneath the dignity of a philosopher to contrive an improved garden chair for such a valetudinarian, to devise some way of rendering his medicines more palatable, to invent repasts which he might enjoy, and pillows on which he might sleep soundly; and this though there might not be the smallest hope that the mind of the poor invalid would ever rise to the contemplation of the ideal beautiful and the ideal good. As Plato had cited the religious legends of Greece to justify his contempt for the more recondite parts of the art of healing, Bacon vindicated the dignity of that art by appealing to the example of Christ, and reminded men that the great Physician of the soul did not disdain to be also the physician of the body (*de Augmentis*, lib. 4, cap. 2).

* * * * *

A philosophy which should enable a man to feel perfectly happy while in agonies of pain would be better than a philosophy which assuages pain. But we know that there are remedies which will assuage pain: and we know that the ancient sages liked the toothache just as little as their neighbours.

Macaulay was a Philistine, though a Philistine of genius, and his article on Bacon is a proof of his Philistinism. But in regard to medicine, we do not think the most enthusiastic disciple of the great philosopher could seriously say, *Mallem errare cum Platone.*

It was stated in the JOURNAL of June 7th that the first award of the Broquette-Gouin, of the value of £400, had been made to Professor Grasset of Montpellier. We are now enabled to add that the professor has decided to give the sum to the Medical Faculty of the University for the purpose of founding a special prize for students.

SCIENCE NOTES.

DR. ROBERT BROOM, Keeper of Vertebrate Palaeontology in the South African Museum, in his Croonian Lecture before the Royal Society, on June 5th, sketched a theory of the origin of mammals, which for its full development would have required a course of half a dozen lectures at least. Dr. Broom went to South Africa some fifteen years ago with the intention of studying the subject, for there is there an opportunity unequalled anywhere else of palaeontological research in a region some two thousand miles square with a depth of strata measuring seventeen hundred feet. The particular merit of the theory which Dr. Broom has elaborated seems to be that it takes full account of the struggle for life of carnivorous races in face of a decrease in the numbers of the herbivorous animals on which they preyed, and the effect of this on the direction of specific evolution. In the lecture he sought to trace the evolution of mammals from Cotylosaurians through carnivorous lines from the Upper Carboniferous period to that of the Lower Jurassic. He argued that in the types of animal along this carnivorous line—that is to say, in the Lower Permian period the Therocephalia, in the Middle and Upper Permian the Gorgonopsia, and in the Triassic the Cynodonts—the skull is very mammal-like. In the Lower Jurassic strata he said the cynodonts were so mammal-like and the mammals so cynodont-like that in no single case was it possible to be absolutely certain which was which. This line of argument was illustrated by a long series of drawings. He suggested that the small gorgonopsians fed almost exclusively on the comparatively slow-moving small herbivorous anomodonts. When in the Triassic period the last named became rare, the carnivorous animals which had subsisted on them had to seek other prey, lizard-like and more active, and the consequent necessity for increased activity in the pursuers resulted in the cynodonts, and finally in the mammals. In Upper Triassic times the larger cynodonts preyed upon the large anomodont, *Kannemeyeria*, and carried on their existence so long as these anomodonts survived, but died out with them about the end of the Trias or in Rhoetic times. The small cynodonts, having neither small anomodonts nor small cotylosaurs to feed on, were forced to hunt the very active long-limbed thecodonts. The greatly increased activity brought about that series of changes which formed the mammals—the flexible skin with hair, the four-chambered heart and warm blood, the loose jaw with teeth for mastication, an increased development of tactile sensation, and a great increase of cerebrum. Not improbably the attacks of the newly evolved cynodont or mammalian type brought about a corresponding evolution in the pseudosuchian thecodonts which ultimately resulted in the formation dinosaurs and birds.

The question as to whether or not the laws of regular reflection are obeyed by the x rays formed the subject of an interesting lecture given by Professor C. G. Barkla before the Roentgen Society on June 3rd. This line of investigation was started some months ago, he said, by three German physicists—Friedrich, Knipping, and Laue—who proved that when a fine beam of x rays was transmitted through a crystal the image obtained on a photographic plate placed on the other side of the crystal included not only a representation of the direct beam, but of a series of secondary pencils round the central impression. The interference pattern thus produced was explained on the spreading-wave hypothesis. It was subsequently discovered by W. L. Bragg that x rays could be reflected from the cleavage planes of crystals. Professor Barkla said that in his own experiments he used an ordinary x-ray tube, and made the rays emerge from a pinhole aperture. A thin sheet of rock salt or other crystal was placed at a distance of 40 or 50 cm. from the anticathode, and by observing the effects obtained on a photographic plate he was able to demonstrate that the laws of reflection did appertain to the Roentgen radiation. He exhibited a large number of photographic results, the general effect being that of various feeble secondary pencils arranged, often in what appeared to be concentric circles, around the central and more or less opaque patch due to the direct beam. Given sufficient photographic exposure it looked, he said, as though there might be an indefinite number of these secondary pencils. No part of Professor Barkla's lecture was more illuminating than that in which he showed why crystal was the chosen medium for this order of effects. With a surface of mercury or any polished metal, while the free electrons emitted secondary waves in all directions, there was destructive interference also in practically every direction, so that the effect was effaced. Each molecule in a surface sent out a train of rays, but unless certain relations held between the distances from one molecule to another there would be destructive interference. The rays were not reflected regularly from a surface of mercury, because such a surface, while appearing to be a plane, had irregularities of molecular structure which were large as compared with the wave-length of the Roentgen radiation. A surface of the desired regularity was, however, provided by the layers in a crystal, where the molecules were arranged perfectly in definite planes, and with sufficient regularity to produce regular reflection. The reflection itself was due to the vibration of the constituent electrons within the molecules of the crystal, such vibration being set up by the impinging rays. The intensity of this secondary effect, in the experiments so far carried out, was nothing like 1 per cent. of the intensity of the direct beam. Professor Barkla thought it possible that an elliptical reflector might be arranged with sheets of mica, and the radiation be brought to a point focus, though whether the more intense beam thus produced would be of any use in secondary ray therapeutics he could not say. He concluded by reaffirming the certainty that x rays were regularly reflected exactly as light from regular planes in the crystal, and that the photographic result was due to an interference effect with the secondary radiation.

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CREMATION.

As will be seen from the article which appears at p. 1279, the progress of cremation in this country is steady, though disappointingly slow. It is now nearly forty years since the Cremation Society of England was founded by Sir Henry Thompson, and notwithstanding the most strenuous efforts to bring home to the people at large the advantages of this method of disposing of the dead, it cannot be said that these are yet properly appreciated.

The attitude of the press, whose function is supposed to be to mould public opinion, but which more often simply reflects it, is on the whole one of indifference. This is sufficient to prove that cremation makes little or no appeal to the ordinary man. It is hardly to be expected that it should, for most men try to put from them the thought of death till the grim spectre rises before them. Though among the cultivated classes cremation may almost be said to be becoming fashionable, the people as a whole still prefer earth burial; the poor particularly look askance at cremation. Sir Charles Cameron, in his presidential address at the annual meeting of the society, thought it strange that this should be so, since it is much cheaper than interment in the ordinary way. We think he has overlooked the fact that to the poor a burial is a function which is celebrated with all the pomp and circumstance that the funeral money will cover. They find a curious pleasure in the trappings of death, and think that by having these as costly as they can they do honour to the dead, besides making a brave show before the neighbours. The very cheapness of cremation may be an additional objection to it in the eyes of the poor. The fact, however, that the bodies of over a score of working men were burnt at Golder's Green in the course of 1912 may be taken to show that cremation is beginning to penetrate to new social strata.

We have said that although progress in this country is slow it has been steady. Since 1904 the yearly number of cremations in Great Britain has doubled. But the number is still an insignificant fraction of the whole number of deaths. It is more encouraging for those interested, as all doctors should be, in the adoption of what *Truth* only the other day called the more sensible and sanitary method of having one's remains disposed of, to look abroad, especially at Germany and Switzerland. Although this method of disposal of the dead has become lawful in Prussia only within the last two years, the number of cremations in 1912 was 9,000, while for the whole of Germany it was three times as great as in this country. In Switzerland there is a municipality, that of Saint Gall, so enlightened that it will not allow earth burial within the limits of its jurisdiction; cremation is compulsory in this sense that if the friends of a deceased person wish the remains to be buried in the ordinary way, the body must be taken elsewhere. This enactment seems to have been accepted by the inhabitants with little demur.

We need not again labour the points in favour of cremation which have so often been urged in the JOURNAL. We need only repeat that the sanitary argument is irrefutable, and the safeguards against crime are much stricter than in the case of ordinary burial. The religious prejudice has to a large extent died out. The Roman Catholic Church, indeed, still refuses to sanction the burning of the dead. But, as we have explained on previous occasions, this is not for any doctrinal reasons; it is a purely disciplinary measure, which could be rescinded at any time. Doubtless it will be rescinded in time, but it is a pity that a body of world-wide influence should not lead in a matter which must necessarily become of vital importance to the welfare of the living instead of waiting till it has to follow in the rear of a general advance. There is nothing whatever antagonistic to religious sentiment or belief in cremation. This is practically acknowledged by Rome itself, which permits of the burning of bodies in times of epidemic and war, when regard for the safety of the living makes it imperative that the bodies of the dead should be disposed of quickly.

Among the advantages of cremation, it has been pointed out more than once in the JOURNAL that it offers a means of reviving the beautiful old custom of burial in churches. The authorities of Westminster Abbey, we believe, now make it a rule that persons whose remains are to find a resting-place in that venerable building must first be cremated. The council of the Cremation Society states that in August last a chapel under the choir of St. Columba, Pont Street, Belgravia, was consecrated for the purpose of receiving and preserving the urns containing the ashes of persons who had been cremated. A Faculty was granted in January of last year for the immurement in the north wall of Coychurch Parish Church, and near Mr. Arthur J. Williams's family pew, of a sealed urn or casket containing the cremated ashes of the late occupier, who was formerly M.P. for South Glamorgan.

In a brief summary of the report of the Cremation Society of England the *Times* speaks of the argument that "cremation removes the possibility of being buried alive" as "singular." We should have thought it was a matter of common knowledge that this fear haunts many people throughout life, and has led not a few persons, including that very strong-minded lady Miss Frances Power Cobbe, to leave directions in their will that a doctor should make sure by thrusting a knife into the heart. Premature burial, although there is an association for its prevention which enjoys the patronage of Mr. George Greenwood, M.P., Miss Lind-af-Hageby, Dr. Josiah Oldfield, and Dr. Stenson Hooker, must be extremely rare. But it is impossible to deny that it has occurred and may happen again. Edgar Allen Poe has pictured the horrors of such an event. His description is well known but will bear quotation here: "Fearful, indeed, the suspicion—but more fearful the doom! It may be asserted without hesitation that no event is so terribly well adapted to inspire the supremeness of bodily and of mental distress, as is burial before death. The unendurable oppression of the lungs—the stifling fumes of the damp earth—the clinging of the death garments—the rigid embrace of the narrow house—the blackness of the absolute night—the silence like a sea that overwhelms—the unseen but palpable presence of the Conqueror Worm—these things, with thoughts of the air and grass above, with memory of dear friends who would fly to save us if but informed of our fate, and with consciousness that of this fate they can never be

informed—that our hopeless portion is that of the really dead—these considerations, I say, carry into the heart, which still palpitates, a degree of appalling and intolerable horror, from which the most daring imagination must recoil. We know of nothing so agonizing upon earth; we can dream of nothing half so hideous in the realms of the nethermost hell." These horrors, of course, are largely created by the morbid fancy of a poet; if premature burial did occur, the person would probably die without recovering consciousness. Still it is a dreadful idea, and it is scarcely singular that among the advantages of cremation should be included the fact that it removes the fear of such a doom.

We congratulate the Cremation Society of England on the pioneer work it has already done, and we hope that it will be encouraged to develop its beneficent activity. It deserves the active support of the public, and especially of the medical profession. The clergy might do much to promote a sanitary reform which, in the interests of the living, cannot be too quickly brought about. Medical practitioners should take every opportunity that comes in their way of urging the adoption of cremation. That it will in time become universal in civilized countries is practically certain, and burial will be looked upon as a "method of barbarism." No person of decent sensibility who has seen, in the Bargello at Florence, Gaetano Julio Zumbo's famous models in coloured wax of corpses rotting in the grave, could bear to think of the bodies of those whom he loved exposed to such slow and hideous corruption. The earth burial of bodies is at once a danger to the living and a desecration of the dead.

THE PROVISION OF TUBERCULOSIS SANATORIUMS FOR LONDON.

WITHIN five weeks from this date a year will have elapsed since the clauses of the National Insurance Act relating to sanatorium benefit came into operation, yet the machinery for giving these clauses full effect is still lacking in many districts, especially perhaps in London. It is true that in addition to arrangements for domiciliary treatment there are some tuberculosis dispensaries and their annexes either in operation or in process of formation, and that the London Insurance Committee can dispose of a certain number of beds for indoor treatment at sundry voluntary hospitals and public institutions; but these are only parts of the mechanism, and a practical scheme for linking them up with other elements and converting the whole into an effective combined system has not yet been completed.

Looking back at the steps that have been taken in the matter it is not easy to see who, if any one, has been responsible for the delay, while it is difficult, and at times impossible, to discover any true co-ordination between the activities exhibited by the various bodies concerned. One thing alone is certain—namely, that since the Act was passed neither the London County Council, nor the Metropolitan Asylums Board, nor the Metropolitan Borough Councils, nor the medical profession in London, have shown any inclination towards an obstructive policy, but, on the contrary, have all done, each within its own field of operation, everything that it could to give as much effect to the sanatorium clauses of the Act as circumstances have permitted.

Probably the initial error lay in the haste with which the sanatorium clauses, in common with many other clauses of the original bill, were adopted by Parliament; while it is certain that one of the difficulties in the way of the evolution of a proper scheme for London is due to the inclusion in Clause 16 (1) almost at the last moment of a sentence which aimed at preventing administration of the sanatorium benefit falling into the hands of Poor Law authorities. Those responsible for the wording of this sentence no doubt forgot for the moment that the circumstances of London are quite special, and that the Metropolitan Asylums Board, which plays such an important part therein, is, though largely representative of Poor Law authorities, a body whose operations extend far beyond Poor Law work.

It is an instructive fact that, despite the sentence in question in the Act, the Departmental Committee on Tuberculosis, in its interim report issued on April 30th, 1912[1]—that is, many months after the Act was passed—nevertheless mentioned Poor Law hospitals as being among the places which should be utilized for indoor treatment, and specifically suggested the institutions of the Metropolitan Asylums Board in this connexion. Indeed, it would almost seem as if the Local Government Board itself at this time and for some time later was under the impression that the sentence in question could be set aside, for it was not until October that this Board pointed out to the London County Council[2] that it was found that, in default of legislation, the provision of sanatoriums by the Metropolitan Asylums Board as such was impossible, and hinted that the London County Council should therefore step into the breach and get round the difficulty somehow. The result was a conference between the County Council, the London Insurance Committee, and the Metropolitan Asylums Board, which led to an arrangement[3] by which the latter placed its Downs Hospital under the nominal control of the London County Council (like accommodation at its Northern Hospital, Winchmore Hill, being subsequently added), the London County Council in its turn placing them at the disposition of the London Insurance Committee.

It was even later, namely, in the middle of December, that the London County Council was definitely informed by the Local Government Board that it would have to play a distinct part in giving effect to the clauses relating to sanatorium benefit, a matter on which there had been room for considerable doubt.[4] Even then it was told that its direct activities would be limited to providing indoor treatment, since the provision of tuberculosis dispensaries and the work connected with them had already been allocated to the various metropolitan borough councils. Nevertheless the Local Government Board wished the London County Council to draw up and submit to it a comprehensive scheme for administration by it of the sanatorium clauses throughout London and in regard to all aspects of tuberculosis.[5] On receipt of this communication the Council acted promptly, and less than two months later adopted a report on the subject from its Public Health Committee. This report[6] did not pretend to put forward any complete scheme, but showed that the aim should be the co-ordination of all existing institutions and agencies in London for the treatment of tuberculosis, and indicated the general fashion in which this might be done. Practically this is how the question still stands, though at a meeting in May the County Council, on a further report from its Public Health Committee,[7] decided

[1] BRITISH MEDICAL JOURNAL, 1912, vol. i, p. 1021.
[2] Ibid., 1912, vol. ii, p. 1163.
[3] Ibid., 1912, vol. ii, p. 1639.
[4] Ibid., 1912, vol. ii, pp. 1333 and 1727.
[5] Ibid., 1912, vol. ii, p. 1727.
[6] Ibid., 1913, vol. i, p. 363.
[7] Ibid., 1913, vol. i, p. 1022.

to instruct its Parliamentary Committee to endeavour to get the Metropolitan Asylums Board placed legislatively in a position to form an active unit in any scheme that the Council might frame for dealing with tuberculosis.

It seems unlikely that the promised Insurance Amendment Act will contain anything relating to this particular point, and meantime the present arrangement with the Metropolitan Asylums Board will doubtless be maintained. Its merit is that it provides approximately 600 beds for cases of tuberculosis, which at present could not be found elsewhere, and that to this extent it obviates the necessity of undertaking heavy sanatorium building expenditure such as would be necessary were the London Insurance Committee solely dependent on the accommodation available at ordinary institutions. Its demerits are that so round-about an arrangement is essentially unbusinesslike, and that it utilizes only to a very limited degree the very valuable machinery long since created by the Metropolitan Asylums Board. This body, which is responsible for the treatment of all cases of specific infectious disorders arising within the metropolitan area, controls as many as 8,500 hospital beds, and these are available for the whole community without distinction—indeed, less than 5 per cent. of them are habitually occupied by Poor Law cases; in addition, it also possesses two large hospitals for children, which, with certain connected sanatoriums at the seaside, provide further accommodation for 2,000 patients, a large percentage of the children admitted being tuberculous.

If the legal difficulties mentioned were removed two benefits, it is suggested, would follow. Instead of making temporary arrangements for the accommodation of a certain number of tuberculosis patients the Board would very likely be able to provide out of its own resources so much accommodation that the London County Council would never need to build sanatoriums of its own and to create all the new machinery connected with their administration. The Board itself would also benefit. At present it suffers from the fact that while it has to maintain a large number of fully-staffed institutions it is dependent for work on the rise and fall in the incidence of zymotic disease. With a constant new source of work such as would be provided by tuberculous patients it could, as occasion arose, make any necessary interchange of staff, rearrange the distribution of beds, and effect many economies. The financial questions seem hitherto to have received inadequate attention. It is stated that the funds of the London Insurance Committee will not be sufficient to pay for many more persons than are now under treatment, and that it is unlikely that the portion which may be allotted to London out of the capital sum provided under the Act for building would relieve the ratepayers of much of the cost if the London County Council were compelled to embark upon a scheme for building sanatoriums on a large scale.

For these and other reasons it seems certain that the London County Council will not be obstructed in obtaining the legislation mentioned, and it is clear that the Local Government Board would co-operate. It is by no means certain, however, that the House of Commons would prove amenable on the point, despite the fact that the Metropolitan Asylums Board is not truly a Poor Law authority. But should the House approve, and should it be ready to apply the same underlying principle (as recommended by the Departmental Committee on Tuberculosis) to the whole country, a very broad vista would be opened up.

CORONERS' INQUESTS.

THE discussion upon the futility of the coroner's inquest, raised recently by Dr. Brend before the Medico-Legal Society, although breaking no new ground, served a very useful end. It clearly showed that, notwithstanding the fact that it is generally admitted that the law dealing with this subject demands amendment, there exists nevertheless a very wide divergence of opinion as to the nature and extent of the reforms required. The discussion has helped to make it clear that the present confused and unsatisfactory condition of things is in a large measure attributable to the absence of any clear definition of the actual fundamental purpose of the inquiry. A coroner's inquest is held presumably for the purpose of ascertaining the cause of death. Although the cause of death can be considered from various aspects, such as the legal or the scientific or what, for want of a better term, may be described as the commercial, as exemplified by the point of view of an insurance company or of an employer or other person liable to be called upon for compensation, the Coroners Act, while stating the conditions under which an inquest shall be held, contains no pronouncement as to the actual purpose it is to serve.

In consequence of the absence of any guiding principle in the matter, every coroner has been compelled to become a law unto himself, and to select such reasons as seem good to him for holding an inquest. The result is that there is a very marked divergence in the practice of coroners, for each has to form his own conception of his duties. The fact that a coroner is justified in the exercise of his absolute discretion, so long as he keeps within the four corners of the Act, was made clear in certain correspondence between the then Lord Chancellor and the British Medical Association in 1904, in which it was stated that a coroner is not bound to take his law from any one and can only be removed from office for actual misconduct. To this same cause is largely due the fact that the scientific value attaching to coroners' verdicts usually is negligible. Such findings as "accidental death" and "death from natural causes" have no meaning or value as far as vital statistics are concerned. They merely serve to eliminate questions of negligence or foul play. The records show that such verdicts as "felo-de-se" and "suicide during temporary insanity" are interchangeable terms and vary largely in accordance with the idiosyncrasies of particular coroners. It would be easy to multiply instances of the kind, and it is a serious matter that the statistics relating to this large and most important class of death are vague and misleading and contribute nothing of real value to the study of sociological problems. They must remain in this unsatisfactory state until the fundamental purpose of the inquest is defined and regulations made to ensure that all such inquiries shall have a definite purpose and be conducted upon definite lines, and shall not, as at present, depend upon the unfettered decision of an individual, who may himself be somewhat vague as to his real duties in the matter.

It is, indeed, easy to prefer a serious indictment against the existing procedure, but it is more difficult to formulate suggestions for reform, owing to the wide divergence of opinion that exists on the subject, and to the fact that coroners may claim some vested interests, to which, no doubt, they will jealously cling; but it is difficult to see how any reform of the law relating to coroners can be usefully considered apart from the question of

reform of the law relating to death certification and registration, as the two subjects are inseparably bound together, the one being, in fact, the complement of the other. Any satisfactory amendment of the present system of certification and registration must of necessity be accompanied by certain alterations in the duties of coroners, whose mission, when all is said and done, is solely to deal with those cases in which a registrar is unable to accept a certificate without a coroner's authorization, a coroner being, in fact, the last link in the chain forged by the Registration Acts. Logically, he would appear to be definitely concerned with determining the pathological cause of death, as information regarding other matters is not provided for on death certificates. This view is strengthened by the fact that there already exists, quite independently of the coroner, special machinery for dealing with all the important issues that arise at inquests, with the exception of the determination of the actual pathological cause of death.

The matters arising out of inquests that come before magistrates' courts and county courts form a very small part of their work, and it is difficult to see what useful purpose would be served by interfering with the present useful function of these courts, as would be the case if their intervention was abolished and the inquest made a legal court of first inquiry, as suggested by some reformers.

The determination of the pathological cause of death could easily be made the fundamental object of the inquest without necessarily limiting the inquiry to that particular point, for there seems to be a large body of opinion that some really useful purposes are served under present conditions, more especially by means of the publicity of the inquiry, and its more or less conversational character.

It is claimed for this publicity that it acts as a deterrent, and that much useful information regarding general questions of health and the nature and prevention of accidents is thereby disseminated, while the legal profession seems to attach great value to the admission of hearsay evidence, which renders it possible to conduct a fishing inquiry in cases where, though no individual is clearly implicated, suspicious circumstances may exist. On the other hand, this publicity is frequently the cause of pressure being put upon medical men either to disguise the true facts or to avoid an inquest, owing to the very great distress that is caused to those concerned, by the very nature of the proceedings, a distress which is not infrequently grievously aggravated by the needlessly intimate nature of the questions that are put. As the laws of evidence are not observed in a coroner's court, it may happen that facts may be elicited which cannot be offered as evidence before another tribunal, but, being reported in the newspapers, become matters of public knowledge, and so in a sense may be said to prejudice the case. This, in fact, a coroner's warrant of committal absolutely does, for it commits an individual for trial as guilty of a certain charge, whereas a magistrate's warrant merely indicates that there is sufficient *prima facie* evidence to justify further inquiry.

Any scheme for reform of the law relating to coroners that does not include amendment of the Registration Acts must, as already indicated, be insufficient, and may be said to begin in the middle. Existing conditions must be carefully considered, and satisfactory reforms will have to be based upon broad views if they are to obtain the support necessary. This will not be readily forthcoming if there is any suggestion that they rest upon special pleading on behalf of either of the great professions interested in the question.

FUTURE ANNUAL MEETINGS.

As already announced, the Aberdeen Branch has invited the British Medical Association to hold its annual meeting in that university city next year, 1914; and in making this announcement we ventured to say that it would be received with great pleasure by members of the Association. We believe that the further announcement that we are now in a position to make will be received with equal satisfaction; it is that the Branch Council of the Cambridge and Huntingdon Branch has adopted a resolution recommending the Branch to invite the Association to hold its annual meeting in 1915 in Cambridge. If anything could add to the pleasure with which this announcement will be received it is the fact that it is intended to invite Sir Clifford Allbutt, Regius Professor of Medicine in the University of Cambridge, to fill the office of President.

HOSPITALS AND RESEARCH.

Mr. G. W. E. Russell is a writer with a delightful sense of humour and a gift of happy phrase, and he has seen history in the making and many of the men who helped to make it at such close quarters that his comments are always interesting and often informing. But, as George III said of Shakespeare, there is a good deal of nonsense in his writings; this is especially noticeable when he abandons the position of a critical observer of *choses vues* and allows himself be carried away by prejudice. In his recently published *Half Lengths* there is an essay in which, after making suggestions as to the uses to which wealth may be put, he goes on to say: "Hospitals again—here is a boundless field for the rich man's activities. It would be no contemptible ambition to build in the heart of some great city or on the hills which surround it an imitation of the German Hospital at Alexandria with its miles of marble corridors and its plenitude of appliances which make illness a luxury; all worked by 'sweet societies' of trained Deaconesses who labour for no other reward than the love and gratitude of the patients. Only let the rich man beware lest the disingenuousness of 'research' bring evil out of his intended good, and pervert the place of healing into a torture-chamber or a shambles." We are sorry to be obliged to say that in this passage Mr. Russell himself is disingenuous. He has been connected with the management of a well-known hospital, and in that capacity he must have learnt, if he learnt nothing else, that there are no "torture-chambers" or "shambles" in such institutions. He should leave such appeals to the "gods," to Mr. Stephen Coleridge and Miss Lind-af-Hageby, who have not had his opportunities of knowing the truth. A hospital in which clinical and pathological research is neglected must be unprogressive, and therefore cannot adequately fulfil the function for which it exists. The absence of research means stagnation. It is the sick poor who suffer, for gradually methods of treatment are improved, often revolutionized, by the results of research. Mr. Balfour put this point with admirable clearness the other day at Guy's Hospital, when he said that to look upon a hospital merely as a place where those who were sick or hurt went for healing was a very narrow view, because, unless it was also a place in which the future leaders of the medical profession were to be trained, its usefulness would die out with the present generation. It was at least as important that the great hospitals should be made efficient training grounds for the physicians and surgeons of the future as that they should afford a field for their beneficent enterprise. He insisted that to carry out that work effectively not only teachers but researchers were required. While to Mr. Russell "research" suggests "torture chambers" and "shambles," to the larger and more enlightened mind of Mr. Balfour it is a necessary means of progress. It offers the only hope of solving the many problems which stand

in the way of the advance of knowledge and baffle our power of curing, relieving, or preventing disease. We repeat, it is false that scientific "torture-chambers" exist anywhere in this country. Mr. Russell's insinuation that there are such places in our hospitals is worse than disingenuous: it is a calumny on a body of men whose ethical standards and moral character are, we do not hesitate to say, higher than those of any other profession whatever. Fortunately for mankind these men let the fanatics rave. But in the interest of the public the spirit which inspires their work and the lofty end to which it is directed should protect them against abuse which is as foolish as it is malicious.

MENTAL DEFICIENCY BILL.

DURING the last few days two appeals for the Mental Deficiency Bill have been published. The first, which is inspired by the fear, very generally entertained, that the Government will this year again drop the bill, is a direct request that sufficient time may be set aside to pass it. The appeal is signed by laymen interested in the subject as members of educational authorities or for other reasons, and by physicians who on various grounds are specially qualified to speak for the profession. It points out that "the principle of the compulsory education and training of defectives has long been conceded by the Education Acts dealing with blind, deaf, and epileptic children. It can hardly be regarded as anything more than a cruel inadvertence that in most parts of the country a feeble-minded child cannot at present be protected, unless its misfortune happens to be complicated by epilepsy. When, at the age of 16, a child who has already been under care and observation for several years still exhibits such mental deficiency as to render it incapable of self-protection and self-control, it is surely no unreasonable interference with the liberty of the subject to extend our care of it through years of special danger and temptation, and as long as may continue to be necessary, with the safeguards (provided by the bill) of short-period certification, and periodical visits by independent authorities armed with the power of immediate discharge." The opposition to the bill last year came from a very small number of members but was very determined. Mr. Wedgwood, who was one of those who opposed, has now written to the *Times* stating that he is in a position to assure both the Mental Deficiency Bill and the Elementary Education (Epileptic and Defective Children) Bill a rapid passage during the present session if two conditions are complied with—first, that the children must not be taken to the "homes" or "special schools" against their parents' wish, and, secondly, that the "homes" must be homes and not prisons, the inmates being as free to leave as they are to leave the existing admirable institutions. As to the second condition at least, it is not easy to see how any compromise could be made without destroying the efficiency of the bill. The second appeal is in the form of a letter addressed to the Home Secretary and signed by medical teachers and practitioners and teachers in various departments of physiology, biology, and anthropology in the great centres of learning in the three kingdoms. The letter urges that should the bill become law care should be taken in its administration to secure the continuous prosecution of research into the conditions on which mental deficiency depends and into the means by which it may be remedied or prevented. It is pointed out that the conditions must be due either to defective formation and development of the active structures of some portion or portions of the brain, or to defective formation or supply of the fluids by which these structures are surrounded and by which they are stimulated to activity. The last point is illustrated by a reference to the influence of the thyroid and other so-called ductless glands. The signatories expressed the hope that any system of treatment useful in the case of some of the lower defectives would be still more useful in raising the level of those above them, and would furnish a first step towards a system of education founded upon physiology. They point out also that the careful study of the imperfect brain development and simple intellectual functions of defectives might throw valuable light on the more complicated acts and conditions of the normal individual. The importance of utilizing for the general benefit of the community the facilities for scientific study which institutions established under the bill would afford is insisted on, and it is urged that the duty of so utilizing them should be committed to men of science fully cognizant with all that is known in relation to the subject and able to point out the direction in which further inquiry should be pursued. To this end it is asked that there should be an adequate representation of biological science on any commission to which the administration of the law may be entrusted.

VACCINES IN DERMATOLOGY.

WRIGHT'S methods are neither widely known nor generally accepted on the Continent, and it is therefore of great interest to read the results of some experiments, and the conclusions reached from them, by such recognized authorities as R. Sabouraud and H. Noiré.[1] The first part of the paper is devoted to a detailed description of the technique adopted in the preparation of the vaccines. The organisms used were staphylococci obtained from furuncles which the authors term deep or subcutaneous, the morococcus of Unna (identical with the polymorph coccus of Cedercreutz), and termed superficial or surface coccus, inasmuch as it is never found in boils, sycosis, or carbuncles; and thirdly, Sabouraud's seborrhoeic microbacillus commonly found in the acne comedone, and exceedingly difficult to cultivate. After an accurate description of dosage methods which accord with those in vogue with us, the authors reach the following conclusions: (1) The lesions most favourable for the treatment are undoubtedly furuncles. They have not so far met with any unfavourable results, and improvement—sometimes cure—was manifest after the first or second injection. (2) Less satisfactory results were obtained in the case of staphylococcic folliculitis and sycosis. Improvement up to a point was the rule, and then other methods were required for the residual pustules. But the patients themselves were convinced that no other methods had afforded equal relief. (3) Morococcus vaccine has no influence on lesions due to staphylococcus infection—for example, boils—nor is their injection followed by any sort of local or general reaction. The effect of this vaccine on lesions supposed to be caused by the morococcus (for example, pityriasis alba capitis, acne pustulosa, etc.) is not satisfactory, and the writers are of opinion that the failure is due to the fact that the organism is symbiotic, and that a vaccine to be successful must be composite and contain just those organisms present in each individual case. (4) The extreme difficulty of the cultivation of the microbacillus and the fact that it is comparatively non-virulent is responsible for the less imposing results obtained in acne and seborrhoea oleosa. But there are cases which respond after the first injection, and with weekly progressive doses go on to complete cure in four or five weeks. Others, again, especially acne furuncles of the neck and nape of the neck and acne necrotica of the temples and scalp, fail to react with the microbacillus vaccine alone, and are rapidly influenced if staphylococcus vaccine is combined with it. There are probably cases in which a mixed vaccine of the microbacillus and the morococcus would be successful, as should theoretically be the case in pityriasis seborrhoica. No positive results were obtained in progressive seborrhoeic alopecia. The authors emphasize the complete absence of all dangerous complications or subsidiary effects. They consider autogenous vaccines

[1] *Annales de derm. et de syph.*, vol. iv, No. 5, May, 1913.

unnecessary in cases of furunculosis, and are of opinion that estimation of the opsonic index is not to be relied on as a guide to treatment. They advise a more general use of vaccines in French dermatological circles.

HEALTH OF POTTERY WORKERS.

THE trend of modern legislation towards improving the health of the people is nowhere more evident than in the rules and regulations governing the hours and conditions of work of those employed in operating the great industries. Masters and men alike are now realizing that success in business requires above all things the physical fitness of the workers employed. That the masters thoroughly grasp the importance of this is evidenced by the opening, on Monday, June 9th, of an exhibition in the King's Hall, at Stoke-on-Trent, of appliances designed to carry out the latest Home Office Regulations in regard to the pottery trade. The exhibition has been promoted by the Joint Committee of Pottery Manufacturers of Great Britain, and is being held in the very centre of the industry. The holding of such an exhibition reflects great credit upon the promoters whilst evincing strongly the keen desire of all concerned to carry out the new regulations as efficiently as possible regardless of expense. The present code of rules for the pottery trade was drawn up by a Home Office Departmental Committee, upon which both employers and workpeople were represented. The new rules aim in the main at reducing, as far as possible, the dangers arising from contact with lead and in preventing the spread of dust, the two factors which together are responsible for most of the mischief to pottery workers. In addition, they deal with the carrying of weights by young people and females, and for the first time they restrict the working hours of adult males engaged in processes involving contact with lead. The regular medical examination of all such workpeople is required once in each calendar month; the keeping or eating of any food in a room where lead processes are carried out is strictly prohibited, while suitable overalls, including head coverings provided by the employer, have by regulation to be worn by the workpeople. The employer also has to provide milk, or cocoa made with milk, to all women and young persons employed in lead processes who commence work before 9 a.m. When it is considered that working in pottery has never been remarkably unhealthy, the thorough and detailed character of the new regulations shows how anxious all parties are to prevent any disease which can be directly attributed to the occupation of the patient. The object of the exhibition at Stoke-on-Trent is to bring before masters and men alike the various appliances which must be employed in order that the regulations may be adequately fulfilled. The exhibits consist mostly of ventilating plant, including dust-exhaust apparatus, models showing how efficient protection of exposed machinery may be effected, non-absorbable dust-proof material for overalls, and so on. It is particularly the wish of the Joint Committee that the operatives themselves shall attend the exhibition in large numbers, and to this object lectures have been arranged, which they may attend free of charge. Dr. T. M. Legge, Home Office Medical Inspector of Factories, will give a lecture on "How to keep fit," and Mr. W. Burton, F.C.S., a well-known authority on matters connected with the pottery industry, will give two lectures dealing with the new regulations. The exhibition was opened by Mr. Ellis Griffith, K.C., M.P., Parliamentary Under Secretary to the Home Office, whilst the presence with him on the platform of Sir Arthur Whitelegge, H.M. Chief Inspector of Factories, was further proof of the sympathy felt in official circles with the objects of the exhibition. In his opening speech Mr. Ellis Griffith expressed the hope that the exhibits might be found some permanent resting place where they could be kept together and from time to time new apparatus added as it was devised, so that a complete set of contrivances for use in pottery workshops might be always available for inspection. It is to be hoped that this exhibition at Stoke-on-Trent will meet with the full measure of success it deserves, and thus in a practical manner demonstrate the public approbation of the wisdom and far-sightedness of the promoters. The exhibition will remain open until June 21st.

THE INFLUENCE OF THE CORSET ON ART.

MUCH has been written as to the baleful effects of tight lacing, but the corset finds champions even among medical men at the present day. Like most other matters, the question is one of degree. We are not here concerned, however, with the effect of the corset on health, but with its influence on art. In the March number of *Aesculape* Dr. Felix Regnault points out that the female figure presents two well-marked types: one built on large lines, though somewhat short and expressive more of vigour than of grace; the other tall and slender—"linked sweetness long drawn out," if we may divert Milton's phrase from its proper application. This has in all ages been generally regarded as the true aesthetic type. To fashion themselves like unto it women have employed from the remotest time various artifices—high-heeled shoes, towering pyramids of hair on the head, and especially compression of the body with corsets. The artificially slim waist is seen in the wall paintings of dancing women of the palace of Minos in Crete three thousand years before the siege of Troy; when these were discovered by Mr. Arthur Evans, a Frenchman who happened to be present exclaimed, *Mais ce sont des Parisiennes!* In ancient Egypt both men and women strove to mould their figure to an aesthetic slimness by means of a small corset going up from the waist to the breast, and often kept in place by two braces. In this way the chest was compressed so as to give it a cylindrical shape, as is seen in statues of the God Ammon-Rá, the Goddess Cneph or Chnouphis, and many others. The shoulders were pushed upwards to a horizontal position. The Egyptian artists, therefore, generally represented men with a long, thin body, broad, square shoulders, and arms hanging far from the bust. The ephod of the Jews and the chitoniscus of the Cretans were used for the same purpose. Greek and Roman women used long bandages of cloth (*fasciae*) to compress the bust. These supported hanging breasts, while at the same time the upper part of the thorax was squeezed to hide their bulging. In children the use of these bands tended to push up one shoulder and produce scoliosis. This fashion, which lasted from the second century before Christ to the second century A.D., was denounced by Galen, and by lay writers such as Martial, Terence, Catullus, Ovid, Petronius, Tacitus, and others. The influence of the bandages on Greek art is visible especially on the terra-cotta statuettes intended for the common people. These often represent women abnormally tall and slender, and some of them show evident signs of compression. They are seen especially on some Smyrna terra-cottas of the second century B.C., and on others from Myrina. Compression of the bust from the breast to the hip is seen in the famous painting of the Three Graces found at Pompeii. In the Middle Ages women had the same ideal. In the twelfth century they wore gowns moulded to the chest and abdomen so tightly that they could not bend their bodies or even their arms. A century later they squeezed the upper part of the trunk and made the abdomen project in such a way that Jehan de Meung, who lived between 1280 and 1320, bluntly says that it was often impossible to tell the empty from the pregnant. Gothic art represents women as long and slender, tight-laced in their clothes so that the ribs, the breast, and even the umbilicus are outlined under the stuff. But it does not reproduce nude bodies deformed by exaggerated compression. In the fifteenth

century women compressed the chest either with stays fitted to the figure or with the strings of their gowns. Under Charles VII they used cloth bandages passed round the bust in the ancient manner. They thought the projection of the abdomen caused by this was beautiful, and it was considered good form to present a belly as protuberant as that of a woman several months gone with child. The artists of the fifteenth and the beginning of the sixteenth century reproduced these deformities from the models they had before them. In Italy, at the Renaissance the cult of the antique preserved artists from these ugly shapes, and since then the classical tradition has been maintained. On the other hand, the realistic art of the Flemish and German artists produced during more than a century a great abundance of deformed Eves and other unaesthetic nudities. In the seventeenth century we find Riolan, and in the eighteenth Winslow, condemning whalebone stays which went up to the armpits, and like the Roman *fasciae* caused curvature of the spine. In the nineteenth century the corset compressed only the lower part of the thorax. The result of tight lacing in the modern sense is deformity of the lower part of the chest, and as a consequence displacement of the underlying viscera, such as the liver and the stomach, and more or less serious interference with their functions. But inequality of the shoulders is seldom, if ever, seen. Now the fashion has changed once more, and the corset has gone further in its descent. It encases the abdomen, the buttocks, and the upper part of the thighs. At all costs women wish to look long and slim. To that end fine, close-fitting tights have replaced the petticoat, and the gown is moulded over attenuated figures, the outline of which is distinctly visible. Artists no longer take as models the compressed and stiffened figures represented and exaggerated in fashion plates.

IS TYPHUS A COMMON DISEASE?

AT a meeting last December of the Johns Hopkins Hospital Medical Society, Dr. J. W. Anderson put forward a suggestion to the effect that typhus is probably a much commoner disease in American, Canadian, and other cities than is generally believed. The disorder which Brill of New York differentiated some ten years ago both from typhoid and paratyphoid fever, and which has come to be known by his name, was proved conclusively by Goldberger and Anderson some eighteen months ago to be really typhus fever, and at the same time they subscribed to the view that the transmission of typhus fever from patient to patient is brought about certainly by the bites of body lice, and possibly those of head lice, but not by those of bed bugs. They also put forward reasons for believing that the buccal and pharyngeal secretions from human cases of typhus are innocuous, and that the disease is never transmitted except in the fashion indicated. On the basis of these facts, and especially of the identification of Brill's disease—a fairly common disorder in New York—Dr. Anderson at the meeting in question asked whether it was not possible that many mild cases of typhus occurred, but escaped recognition. If it were true the fact would provide a solution of one of the well known problems regarding typhus fever—namely, the occurrence of epidemics after long intervals from any other outbreaks and at a great distance from any known focus of the disease. It would certainly not be remarkable that a benign form of a disease, often regarded nowadays as a species of medical curiosity, should fail of recognition, and point is incidentally given to the suggestion by a recent letter in the *Irish Times* in regard to a recent outbreak of typhus fever in Connaught. The object of the letter, which is anonymous, is to point out the probability of the disorder in this instance being transmitted by body lice, but incidentally the writer mentions that some years ago he admitted to an institution of which he was in charge a number of cases which he regarded as influenza, and which he identified as typhus fever only when a case with very definite symptoms was eventually sent in. This letter evoked from another medical correspondent, also writing anonymously, a letter containing a statement to the effect that immunity from the bites of body lice and other like vermin can be secured by the simple process of taking one sulphur lozenge daily, it being added that travelling showmen and their kin are well aware of this fact, and have assured the writer of the complete efficacy of the plan. The amount of sulphur contained in a sulphur lozenge is small, and the amount which would reach the skin after its introduction into the stomach is naturally smaller, but since there is no scientific knowledge of the degree of antipathy, if any, which body lice experience towards sulphur, it is impossible to say that the suggestion is quite unfounded.

THE LOT OF THE CONGRESS SECRETARY.

THE Congress season is upon us, and those who have undertaken to organize these meetings are working at the highest pressure. The preparation is—*si parva licet componere magnis*—something like the mobilizing of an army, and all who have a hand in it must feel the strain. But the lot of the general secretary is particularly unhappy. Some hints for the guidance, if not the encouragement, of these officers, may be found in a skit written by Dr. F. Berlioz, general secretary of a congress of hydrology held some years ago at Aix-les-Bains. It is cast in the form of the Decalogue as it is taught to French children; but the duties of the general secretary of a congress are so numerous and multifarious that the author has been unable to compress them within the limits of ten commandments. As any attempt at translation would spoil them, we give the lines in the original:

Longtemps d'avance tu t'y prendras
Pour ne pas choir piteusement.
La semaine tu travailleras
Et le dimanche mêmement.
Nuit et jour tu penseras
A recruter des adhérents.
Des circulaires tu enverras
Et des avis pareillement.
Les rapporteurs tu presseras
Pour leur travail très souvent.
L'imprimeur tu surveilleras
Car il retarde tout le temps.
L'administration tu solliciteras
Et l'on t'écoutera courtoisement.
Aux compagnies tu demanderas
Des permis résolument;
Et tu les obtiendras
En général facilement.
Ton président tu honoreras
Et les vices pareillement.
Les délégués tu placeras
En bon poste naturellement.
Les dames tu accueilleras
De ton sourire gracieusement.
Des discours tu prononceras
Aussi courts qu'intéressants.
Des toasts tu porteras
Le plus possible spirituellement.
Des excursions tu organiseras
Et des banquets agréablement.
Quand toutes choses bien fait tu auras
Les congressistes seront contents.
Après tu te reposeras
Si tu le peux un court moment
Et puis tu reprendras
Ton labeur quotidiennement.

Every one who has had to do with the arrangements for a congress will feel the force of the injunctions to work all the week and also on Sunday; to beat up adherents; to flood the medical world with circulars and notices; to harass the illustrious beings who have promised addresses and papers; to apply constant stimulation to the dilatory printer; to be a "sturdy beggar" from Government officials, railway companies, etc.; to be careful in assigning places of honour to delegates—we have known the most deplorable consequences follow some supposed affront to the dignity of a delegate; to cultivate a winning smile for the ladies; to be brief and as witty as Nature allows in speech-making; to organize excursions, garden parties, dinners, and all manner of entertainments. But M. Berlioz is too optimistic when he says that when one has spent oneself in the effort to make things go well the congressists will be satisfied. The most that the overworked and over-worried general secretary can hope for is to escape abuse. And when the hurly-burly's o'er he must find comfort in the feeling that virtue is its own reward.

THE ANTHROPOMETRY OF AMERICAN IMMIGRANTS.

In 1908 Professor Franz Boas, the well-known anthropologist, was instructed by the United States Immigration Commission to investigate the physical characteristics of immigrants. He has now presented his report,[1] which comprises most of the statistical data and an account of the results attained. The racial types examined were Bohemians, Slovaks and Hungarians, Poles, Hebrews, Sicilians, Neapolitans, and Scottish. The features studied were stature, weight, length of head, width of head, width of face, and colour of hair. The wealth of statistics provided can be gauged by the fact that in a volume of 573 pages nearly 500 consist of tables or diagrams. Professor Boas finds that the varying physical types represented among the immigrants tend to be modified, converging towards a uniform type. Thus the East European Hebrew, who has a very round head, becomes more long-headed; the South Italian, who in Italy has a very long head, becomes more short-headed, these two divergent forms thus tending to approach a uniform type so far as roundness of the head is concerned. In order to avoid the introduction of any fallacy due to the differing composition of the immigrant population at different times, parents were compared with their own children born before and after immigration. Combining all his results, Dr. Boas finds, for instance, that "children born less than ten years after the arrival of their mothers in America lose 0.9 unit in their cephalic index, and those born ten years or more after their mothers' arrival in America lose 1.9 units in their cephalic index, as compared to foreign-born children." Professor Boas believes that the observed results are to be attributed to the action of the environment. In discussing the suggestion that changes in physical type might be produced by a selective death-rate, certain types being less fitted to survive in the new environment, he observes: "On the whole, it seems to my mind the burden of proof would lie entirely on those who claim such a correlation between head index, width of face, etc., and death-rate—a correlation which, I think, is highly improbable, and which could be proposed only to sustain the theory of selection, not on account of any available facts. I grant the desirability of settling the question by actual observations, but until these are available we may point out that the very suddenness of the changes after immigration and the absence of changes due to selection by mortality among the adult foreign-born would require such a complicated adjustment of cause and effect in regard to the correlation of mortality and bodily form that the theory would become improbable on account of its complexity." As will have been gathered from what has already been said, an immense amount of labour has been expended upon this research, and all students of anthropology must be grateful both to Dr. Boas and to the United States Commission. We cannot, however, say that the report itself is adequate to sustain the very far-reaching and important conclusions indicated. The text shows signs of undue compression, with the result that the statistical processes do not, in the absence of detailed justification, appear satisfactory or complete; this is, perhaps, especially noticeable in the sections treating of heredity, while some of the age and sex corrections need further explanation. Again, the logic of some passages is not above criticism, that we have quoted above being a case in point. The labours of many naturalists, especially, perhaps, those of Poulton and his fellow workers in the field of mimicry and protective resemblance, have demonstrated that phenomena of great complexity, some apparently being reactions to the direct environment, can be adequately accounted for with the aid of a selection hypothesis. There is no inherent improbability in supposing that the operation of a selective death-rate may have had a good deal to do with the results Dr. Boas has observed, and others besides the pure "Neo-Darwinians" will object that this possibility requires something more than verbal criticism. We trust that Dr. Boas may see his way to publish a somewhat less compressed discussion of a problem of such great theoretical and practical importance.

[1] *Changes in Bodily Form of Descendants of Immigrants.* By Franz Boas, Ph.D. New York: Columbia University Press. 1912. (Roy. 8vo, pp. 585; figs. 53, tables 73 + xxxvi. Price 7s. 6d. net.)

THE LIVINGSTONE CENTENARY.

Commemoration is an annual festival at Livingstone College, but this year it was made the occasion of celebrating the centenary of the birth of David Livingstone, after whom the college is named. In the course of the proceedings which took place on June 7th, the Principal (Dr. Harford) mentioned that few of the speakers at various meetings held during the centenary celebrations in May had recognized the close relation between Livingstone's medical training and the great contributions which he made to knowledge of the African continent. It was felt to be appropriate that this should be emphasized at Livingstone College, where missionaries received medical training in order to fit them to go forth as missionary pioneers. A large number of its old students had gone to Central Africa to follow in the footsteps of Livingstone, and others were to be found in almost every part of the world. Wherever they worked they carried with them the spirit of Livingstone in endeavouring to exercise their powers of observation, a large-hearted sympathy, and a readiness to co-operate with other Christian missionaries. A short speech was also delivered by Sir Alfred Pearce Gould, who after dwelling on the distinction which should be drawn between medical missionaries and missionaries who had received elementary medical training, said that he would like to see every missionary undergo nine months' training at the college before going abroad; those who had not done so should when on furlough take advantage of the opportunity of study thrown open to them. The college, it may be mentioned, has prepared a souvenir of the Livingstone centenary containing coloured reproductions of various pictures of Livingstone in its possession, and these are on sale for the benefit of the Centenary Fund, by which it is hoped to clear off a mortgage on the property, effect certain improvements, and form the nucleus of an endowment.

TUBERCULIN DISPENSARIES.

At a meeting of the Tuberculin Dispensary League, held on June 6th, at 70, Chester Square, the Earl of Denbigh in the chair, Dr. W. Camac Wilkinson delivered an address in which he expressed the opinion that the only satisfactory method of dealing with tuberculous patients under the conditions laid down by the Insurance Act was by means of the tuberculin dispensary. Sanatorium treatment, he said, was inadequate because, owing to the enormous cost of the erection and maintenance of large buildings, it was impossible to provide accommodation for all those who needed treatment; whilst among the working classes, where consumption was always most rife, there were innumerable cases in which the patient could afford neither the time nor the money for the course of treatment extending over many months. It was therefore obvious that the sanatorium system was impracticable as applied to the poor. The tuberculin dispensaries, on the other hand, provided expert treatment, which did not involve the patient's absence from home or the loss of his occupation, and, money not being needed for building purposes, the funds were devoted entirely to the patients. Tuberculosis, continued the speaker, killed some 55,000 persons every year in England and Wales, and there were, in all, about 220,000 tuberculous patients in this country who required treatment. Sanatoriums could only deal with about 20,000 cases, and

the approximate yearly cost of their maintenance amounted to about £600,000. It would therefore cost over £6,000,000 a year to treat every case of tuberculosis in a sanatorium, whereas it was estimated that the tuberculin dispensaries could deal with 70 per cent. of these cases, and secure for the same amount of money that provided sanatorium treatment for 10 per cent. with only 50 per cent. of cures. Moreover, the individual results of the dispensaries were better than those of the sanatoriums, and the treatment itself was popular with the patients. Dr. Wilkinson's views were heartily endorsed by Mr. Charles Bathurst, M.P., who proposed a vote of thanks, which was passed unanimously. This brought the meeting to a close.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Dogs Bill.—By one of those parliamentary incidents which an expert parliamentarian like Sir Frederick Banbury, who has charge of the Dogs Bill, knows how to make use of, this bill was read a second time on Friday, June 6th. It had been anticipated that the whole sitting would be devoted to the report stage of a bill introduced by Mr. Pearce, the Member for Limehouse, to increase the hours of polling, so that they would extend from 7 a.m. until 9 p.m. The bill, as introduced and as passed through Committee, applied to parliamentary and local elections generally, but by one of those compromises which are often arranged in the House of Commons between the two sides, the opposition to the bill was suddenly withdrawn about 2 o'clock, the arrangement made being that the bill should only apply to parliamentary elections, and that the extended hours should be provided when asked for in writing by a duly nominated candidate on the day of his nomination. The Dogs Bill was the second order of the day, and, as the House had emptied after the compromise on the Polling Hours Bill, Sir Frederick Banbury got his second reading without opposition in a few moments. The bill prohibits experiments on dogs for all purposes. It has been sent to Grand Committee A, to which, in accordance with the usual practice, fifteen other members have been added. We understand that it will be strongly opposed in Committee, and in all probability drastic amendments will be introduced. It will then still have to pass the report and third reading stages in the House of Commons for a private member's bill. The chances at these two stages are very slight indeed. The opponents of the measure, however, should certainly be on the alert, as the sponsor of the bill is an old parliamentary hand, full of skill and knowledge of procedure.

Sir Victor Horsley.—Lord Robert Cecil asked the Home Secretary whether he had laid a complaint before the Royal College of Surgeons about Sir Victor Horsley; if so, what was the nature of the complaint; and whether he had refused to give to Sir Victor Horsley any information as to its nature.—Mr. McKenna said: Sir Victor Horsley made certain public statements reflecting very seriously upon the professional conduct and skill of two medical officers in the prison service. In justice to those officers, I considered it my duty to bring to the notice of the Royal College of Surgeons the statements made by him and the facts of the case as already stated by me in substance in this House. Having laid this full statement before them, I left the matter in their hands. In reply to Sir Victor Horsley's request for information, I have referred him to the Royal College of Surgeons. The communication of the contents of my letter is a matter entirely in their discretion.

Lord Robert Cecil: May I ask the right hon. gentleman whether he does not think, before making a complaint, or at the time of making a complaint, against a gentleman in the position of Sir Victor Horsley, it would have been better and fairer to have sent a copy of the complaint to the gentleman in question? Mr. King: Does not the right hon. gentleman think that the same rule would apply to Sir Victor Horsley's own conduct?—Mr. McKenna: Yes, Sir; I think if the rule were a good one it would apply, no matter what the position of the person may be. In this particular case nothing was communicated to the Royal College of Surgeons except what was made public, either by Sir Victor Horsley or by me in this House. I thought it my duty to bring his public statement to the notice of the Royal College of Surgeons.

Lord Robert Cecil: Have not the Royal College of Surgeons jurisdiction to consider, judge, and inflict penalties on any member of that body who is guilty of conduct which they regard as unprofessional?—Mr. McKenna: The whole of this complaint is within the knowledge of the accused person. I have communicated to the Royal College of Surgeons the attacks made by Sir Victor Horsley on prison officials.

Lord Robert Cecil: Will the right hon. gentleman now send a copy of the communication he made to the Royal College of Surgeons to Sir Victor Horsley?—Mr. McKenna: No, Sir; I adhere to the view I took originally, that it is a matter within the discretion of the Royal College of Surgeons. I have not marked my letter private, and they are perfectly at liberty to send my letter to Sir Victor Horsley.

Lord Robert Cecil: Will the right hon. gentleman say what objection he has to conveying to Sir Victor Horsley his letter, which must be of great importance to him?—Mr. McKenna: I personally have not the slightest objection; but I wrote my letter to the Royal College of Surgeons, and it is for them to communicate with Sir Victor Horsley.

Factory Inspectors.—In reply to Mr. Gill, Mr. Ellis Griffith said that the Secretary of State had decided to relieve some of the larger districts which, in consequence of the growth in the amount of work, had become unwieldy, and it was proposed to increase the number of districts from fifty-two to sixty-two and that the changes would involve an addition of six inspectors and two inspectors' assistants, together with the appointment of another medical inspector, two lady inspectors and an inspector of junior rank to assist in the work of electrical inspection, making a total increase of twelve. In further reply to Mr. Gill, Mr. McKenna said that superintending and certain special inspectors receive a night allowance of £1 for subsistence when away from home; that inspectors below the rank of superintending inspector receive 15s., and assistants 10s., and that inspectors are authorized to travel by rail first-class, and assistants and other inspectors second-class, or third if there is no second.

Grant for the Highlands and Islands.—In reply to Major Hope, the Secretary to the Treasury said that the special grant of £10,000 made for the benefit of insured persons in the Highlands and Islands was included in the Supplementary Estimates. The question of making a grant for uninsured persons and of providing for its administration was under consideration.

Housing Reform in Wales.—Mr. Edgar Jones asked the President of the Local Government Board whether, having regard to the need of housing reform in Wales, he was prepared to sanction a Provisional Order, under Section 10 of the Local Government Act, 1888, for transferring the powers of the Local Government Board under the Housing Acts to a central administrative council representing all the county councils in Wales.—Mr. Herbert Lewis, who replied, said that it was doubtful whether the proposal could be carried out under the Section.

Cost of Lunatics and Lunatic Asylums.—In reply to Mr. Campion, the President of the Local Government Board stated that the total amount expended by local authorities in England and Wales, otherwise than out of loans, on lunatics and lunatic asylums in the year 1910–11 was £4,100,000. It was estimated that of this sum some £1,200,000 might be regarded as defrayed out of Exchequer grants, £2,250,000 out of rates, and the balance from other sources.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE REGIUS PROFESSOR OF MEDICINE IN GLASGOW.

DR. T. K. MONRO has been appointed Regius Professor of Medicine. It is understood that there were no applicants outside of Glasgow, though it is no doubt sometimes a good thing for a great teaching school to have an outsider brought in to spread new ideas and state fresh views. There has, however, been considerable resentment felt among the local profession that so many of the recent appointments have fallen to graduates of other schools, and it is therefore with great satisfaction that the news of Dr. Monro's appointment has been received, as it is agreed that in him the university has obtained a man well fitted to maintain and extend its reputation. The two previous holders of the chair were by no means young when they were promoted; but Professor Monro, who took his first medical degree in 1888 and has been physician to the Glasgow Royal Infirmary for some time, is still a comparatively young man, and this will be an advantage to the university in dealing with any changes that may be considered to be required.

VETERINARY INSPECTION.

In order to enable the staff of the Local Government Board of Scotland to undertake heavy duties in connexion with the supervision of meat inspection and the inspection of dairies, Professor Gerald Rowley Leighton, M.D., F.R.S.Edin., has been appointed a veterinary inspector. Dr. Leighton is at present the professor of pathology, bacteriology, and meat inspection in the Royal (Dick) Veterinary College, Edinburgh. He is a graduate (M.B., C.M.) of Edinburgh University of 1895. He is the author of works on *British Serpents* (1901), on *British Lizards* (1903), on *The Meat Industry and Meat Inspection* (1910), and on *Scientific Christianity* (1911); and he has written papers on Canine Hydronephrosis, the Evolution of Immunity, and The Pathology of Canker in Serpents. For a time at the beginning of his professional life he was in private practice in Herefordshire.

EDINBURGH UNIVERSITY MEDICAL YEAR BOOK.

For the third year in succession Dr. Duncan C. L. Fitzwilliams has edited the handy guide book to things medical in Edinburgh University known as the *Edinburgh University Medical Year Book*. It will be, and indeed it has already been, of great service to former Edinburgh graduates who may wish to keep in touch with their Alma Mater, giving them information about the present residence and doings of old companions, and about the new developments in post-graduate teaching and the like. There are articles on Lord Lister, on the late Dr. George A. Gibson, on Professor Lorrain Smith, along with photographs of these and of other well-known Edinburgh men; there are full details of the various post-graduate courses, lists of the various local resident and non-resident posts open to graduates in the many hospitals with which Edinburgh is supplied; notes on athletic matters, and a list of the names and addresses of the graduates, arranged alphabetically and also geographically. The title of the work excludes more than scanty references to the great extramural school, with its staff of nearly sixty lecturers, which has in the past been so fruitful a training ground for the university teachers and professors.

MARINE BIOLOGICAL ASSOCIATION.

An appeal to the public will shortly be made for greater financial support for the marine biological research station at Millport on the Firth of Clyde. It appears that there have been during recent years some differences in the West of Scotland Marine Biological Association, but at the recent annual general meeting the chairman intimated that affairs were now being put into a satisfactory condition. It is proposed to secure a sailing boat with motor auxiliary as the funds do not yet permit of the steamer *Mermaid* being put in commission. A clear income of at least £550 is required to carry out the work of the station effectively.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EXTENSION OF MEDICAL BENEFIT TO IRELAND.

THE statements which have been made in the press to the effect that it is not the intention of the Government to include the extension of medical benefit to urban districts in Ireland among the provisions of the promised Insurance Act Amendment Bill seem to have been welcomed both by employers and by employees. The former consider that it would involve a very considerable tax, accompanied by a great deal of trouble, and the employees are becoming confirmed in the opinion that they were better off before the Act was introduced, and that the difficulty of forcing the societies to pay sick benefit is very great. The friendly societies alone stand to gain by the extension of medical benefit, as most of them provide, or are at least supposed to provide, medical attendance as an extra benefit; they would, therefore, receive the extra contributions for what they are supposed to be giving now without them. The method of giving medical benefit adopted by most of the societies would seem to be to send the insured person either to a general hospital, the union hospital, or the dispensary doctor. A special committee appointed by the Belfast Board of Guardians has reported that in its opinion the effect of the Act has been to increase the number of dispensary patients and of those seeking admission into the workhouse hospitals.

THE MENTAL DEFICIENCY BILL.

The omission of Ireland from the Mental Deficiency Bill is very much regretted by those acquainted with the circumstances of the country, although it does not appear that anything very active is being done to remedy the defect. The need for the extension has on several occasions been pointed out in these columns. The pauper insane population of Ireland is, relatively to the total population, appallingly large, and it is steadily increasing. The floating population of the Irish workhouses is largely recruited from the ranks of the classes with which this bill proposes to deal. Though the number of illegitimate births in Ireland is small, it is said that the majority occur in districts where workhouses are situated, and that every workhouse has a *clientèle* of feeble-minded young women who are the mothers of one or more illegitimate children. The Mental Deficiency Bill would give Ireland the power to control the productive forces of insanity. In the first place, it would remove all defectives from the workhouses; and, in the next place, it would enable several counties to join in making provision for special institutions. There is not a single special school in the whole of Ireland for such defective children, while England has nearly 200. Nearly three-quarters of the feeble-minded are the children of the insane or of epileptics or of neuropaths, and there is need of more restriction upon the personal liberty of the feeble-minded and degenerate.

NURSING CONFERENCE IN DUBLIN.

Last week the Nursing Conference met for the first time in Ireland. On June 3rd a reception was given in the Royal College of Surgeons. The guests were received on behalf of the Irish Nursing Association by matrons of the various Dublin hospitals. The principal feature of the proceedings was the pageant of nursing, adapted from the pageant and masque of the evolution of trained nursing, by the courtesy of Mrs. Bedford Fenwick, the author and designer, who was present. There was a very large attendance of members of the medical and nursing professions in Dublin. On June 4th the serious business of the conference was commenced at the Royal College of Physicians, the chair being taken by Mrs. Bedford Fenwick, Honorary President. Miss Huxley, President of the Irish Nurses' Association, gave an address of welcome. Miss L. V. Haughton, Matron, Guy's Hospital, London, read a paper on the preliminary training of probationers; Miss B. Butler, Assistant Matron, St. Bartholomew's Hospital, London, read a paper dealing with reciprocal hospital training; and Miss Musson, Matron, General Hospital, Birmingham, dealt with the subject of post-graduate training for

trained nurses. These papers were followed by an interesting discussion showing the importance of the financial question in arranging for the training of nurses. The President said that it must be recognized by parents that if they were going to put their children into a profession they must pay for it. At the basis of all was the awakening of the professional conscience of women, who realized that they must give of their best to the sick, and could not unless they were properly educated to do it. At the afternoon session two papers were read on the training of the masseuse and on professional ideals with regard to massage workers, and were followed by a discussion. The delegates visited the Rotunda Hospital. In the evening tableaux illustrating the history of nursing from the earliest times were shown at the Abbey Theatre, and were followed by an Irish play.

The morning of June 5th was occupied with a discussion on the registration of nurses, and the following resolution was passed by a large majority:

> This meeting desires to record its earnest conviction that it is absolutely necessary, both in the interest of the professional status of nurses and of the public whom they serve, that provision should be made for their registration by the State, and that such registration should be under the supervision of a central professional authority, and that admission to the register of those who have fulfilled the prescribed conditions should be by the single portal of a State examination. This meeting regrets that the Prime Minister has not so far found time for the discussion of the question in the House of Commons, and urges that facilities may be given for the second reading of the Nurses Registration Bill at the earliest possible date.

In the afternoon the question of the legal status of midwives and Poor Law and school nursing were considered. A garden party was given at the Zoological Gardens, and the Lord Lieutenant, in the course of a short address of welcome, apologized for the absence of Lady Aberdeen at the Congress of the International Council of Women in Paris. In the evening there was a banquet in the Mansion House, with Miss Huxley, President I.N.A., in the chair. On June 6th, after a short meeting at the College of Physicians in the morning, when votes of thanks were passed, the majority of the delegates made an excursion to Glendalough, while the remainder made excursions to Howth and Killiney. The Irish Nurses' Association is to be congratulated on the success of the whole undertaking.

Dr. Steel, Articlave, County Derry.

Dr. J. A. Steel, J.P., has been the popular and trusted dispensary medical officer for Articlave for nearly thirty-five years. On the occasion of his marriage the opportunity was taken by the residents of showing their appreciation of his services, both as a public medical officer and as a trusted private attendant. On the evening of May 30th, at a large and enthusiastic meeting in the Mark Memorial Hall, Articlave, he was presented with an illuminated address and a purse of sovereigns, and Mrs. Steel received a handsome clock with chimes. The profession joins with the donors in their best wishes and congratulations to Dr. and Mrs. Steel.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

BIRMINGHAM.

Birmingham Medical Benevolent Society.

In the ninety-first annual report presented to the annual meeting of this society, held recently, the directors stated that the good work of granting relief to those in need of the society's assistance had been accomplished as usual in a quiet and unostentatious manner. The directors had good reason to believe that the help so given had been urgently needed, and gratefully received in every case. The invested funds amounted to over £16,000. Twenty-seven annuitants received help during the past year, two of these being annuitants for the first time. The annual value of the grants ranged from £36 to £18, and the sum expended on grants and donations in 1912 was £683. Two annuitants had died, so that at the end of the year twenty-five were receiving grants from the society. One member received a donation of £15. The total income was £783, and the expenses £751, leaving a balance of £32. The number of benefit members at the end of the year was 385, an increase of 10 on the previous year. Fifteen new members joined the society, and 5 left either from death or other causes. The directors drew attention to the large number of practitioners in the district who had not yet become members of the society, and urged all interested in the welfare of their professional friends, who were not yet members, to make a special effort to induce them to join. It is estimated that there are nearly 4,000 medical practitioners living in the area covered by this society. Mr. F. Marsh was elected president for the ensuing year; Mr. W. Flewitt, president-elect; Mr. Leedham-Green of Birmingham and Dr. E. N. Nelson of Nuneaton, vice-presidents; Mr. F. Marsh and Mr. W. F. Haslam, treasurers; Dr. Smallwood Savage, honorary auditor; and Dr. Sawyer, honorary secretary. Dr. Stacey Wilson was elected a trustee to fill the vacancy caused by the death of Sir Thomas Chavasse.

West Indies.

An Intercolonial Tuberculosis Conference.

An important intercolonial conference on tuberculosis, which met in Port of Spain, Trinidad, last March, was attended by delegates from most of the colonies in the West Indies, as also by a delegate from Great Britain (Dr. Cecil Wall), and by representatives from Columbia, Surinam, Venezuela, and Porto Rico. It lasted a week, the sessions being interspersed, as elsewhere, by excursions and social entertainments on a large scale. The inaugural meeting took place in the council chamber of the island, and was opened by Sir R. G. le Hunte, G.C.M.G., the Governor, in the presence of a large and distinguished audience.

The Hon. Dr. H. L. Clare, the president of the conference and surgeon-general of Trinidad, then delivered an address in which he gave an illuminating survey of the subject of tuberculosis from the point of view both of governments and individuals, and in addition brought its numerous problems into focus with the special circumstances of the West Indies. Every one in Trinidad, from the Governor and Lady Hunte downwards, had co-operated in endeavouring to make the conference a success, and the speaker hoped the result would be the formation of a kind of central pivot of well co-ordinated scientific and workable data from which might emerge the scheme best adapted to the requirements and capacity of each West Indian island. They might also look forward hopefully to a day not far off when there would be constituted a central West Indian bureau of tuberculosis, which would store all available information on the subject as it was collected from the various islands, and from which would emanate comparative statements as to progress made and valuable suggestions for future guidance. The holding of intercolonial conferences was no novelty, as several had been held on subjects of inter-island interest, such as quarantine, shipping, and foreign trade. But the present was the first West Indian medical conference, and it was right that, dealing as it did with tuberculosis, it should be held in Trinidad, since their zealous honorary secretary, Dr. G. H. Masson, enjoyed the distinction of being the pioneer of any organized effort in the West Indies to grapple with the great white plague. With tropical diseases all West Indians were familiar, but tuberculosis, despite its devastating prevalence, had attracted comparatively little attention either in official reports or among the public. The prevalence of other forms of the disease than the pulmonary was comparatively slight in the West Indies as compared with other countries. The general trend of present medical opinion seemed to favour the view that these other forms were usually of bovine origin, and if this were really the case their relative exemption from surgical tuberculosis was probably due to the fact that although the conditions in which milk cattle were kept were not invariably ideal, they were, from a tuberculosis point of view, incomparably better than those which prevailed in Great Britain and other countries where bovine tuberculosis was prevalent. In the West Indies the cattle lived all the year round in the open air, and, even when delicate and possibly

already infected cattle were imported, their progeny tended to remain free from tuberculosis. Nevertheless it was desirable that the milk traffic of the islands should be kept under observation and suitable measures applied when necessary. Dr. Clare also gave a detailed history of notification as applied to tuberculosis and of aëro-therapy, and drew attention briefly to the outstanding points of tuberculin treatment. In regard to the first subject, he urged the conference and the medical profession throughout the West Indies to insist on the advantages of notification. They should explain the enormous impetus that official knowledge and record of every case would bring to the progress of the tuberculosis crusade, and make it clear that notification was not a tyrannous inquisition but a procedure which would prove a beneficent influence to those already infected and a source of protection to the community at large such as was unattainable in any other way.

Dr. Masson's contribution took the form of an elaborate review of the prevalence and distribution of tuberculosis in Trinidad and Tobago during the last quinquennium, accompanied by diagrams and charts showing the mortality due to it, and comparing this with other rates. The tuberculosis death-rate was 2.29 per 1,000 in 1907–8, and 2.08 per 1,000 in 1911–12; while the same disease caused 8.81 per cent. of the total deaths. The fact was also brought out that quite early in the nineteenth century tuberculosis was believed to be more prevalent in the West Indies than elsewhere, and was then ascribed to the overcrowding of bedrooms and a dislike of ventilation at night. This cause still operated, and not merely among the poorer classes. Another factor of importance was the special susceptibility to tuberculous infection of the negro race, from which the majority of the population had sprung. In addition, both natives and Europeans showed a lack of resistance in lung affections; as in many other tropical countries, excessive heat and a high degree of atmospheric humidity appeared to have a prejudicial effect on the respiratory organs, and gave rise to a high death-rate from non-tuberculous respiratory disease, as well as from phthisis. Hence the practice prevalent among European medical men of sending to the West Indies cases of tuberculosis for the betterment of their health was ill-advised, especially in the hotter months of the year. Its unhappy results had no doubt at one time or another been painfully impressed on West Indian practitioners. A further possible factor in the increased incidence of tuberculosis in the West Indies was that the climate and the receptivity of the bulk of the population together served, perhaps, to supply the tubercle bacillus with an environment which enabled it to take on a greater degree of virulence than in more temperate zones.

The net outcome of the conference was the adoption of a series of resolutions to the following effect:

The first—moved by Dr. Cecil Wall, seconded by Dr. Noc (Martinique)—expressed the opinion that the tuberculosis measures adopted in the colonies and countries represented by the conference ought to include (*a*) notification, (*b*) housing reform, and (*c*) the establishment of tuberculosis dispensaries and other measures for the detection, prevention, and treatment of the disease.

The second—moved by Dr. J. E. Godfrey (British Guiana), seconded by Dr. J. F. Hutson (Barbados)—urged the foundation of an antituberculosis association in every West Indian colony in which one did not already exist.

The third—moved by Dr. MacDonald (Jamaica), seconded by Mr. P. T. Saunders (of the Department of Agriculture)—suggested that the measures adopted by the various Governments should include one aiming also at stamping out bovine tuberculosis where it existed and at preventing its importation.

The fourth—moved by Dr. M. P. Duke (Leeward Islands), seconded by Dr. W. Tucker (Bermuda)—advocated the addition of elementary hygiene and sanitation to the code of schools throughout the West Indian colonies.

The final resolution—moved by Dr. G. H. K. Ross (Jamaica), seconded by the Hon. Dr. E. F. Hatton (Windward Islands)—stated an opinion that the attempt to control tuberculosis would greatly be aided by efficient registration of births, deaths, and marriages.

This conference, which was undoubtedly a great success, included a tuberculosis exhibition and a cinematographic display of the work done at Edinburgh, accompanied by a verbal description from Dr. Cecil Wall. It is proposed to hold a second conference two years hence in British Guiana.

Correspondence.

DIACHYLON OR DUTY: A CALL TO ACTION.

SIR,—It is very gratifying to find Sir Thomas Oliver taking up the question of diachylon as an abortifacient with such vigour and thoroughness. At the same time his letter carries with it a certain sadness, for it shows that this pernicious evil is still spreading and that from its small beginnings in the Midlands it has now extended to the very North of England. In 1906 the late Dr. W. B. Ransom of Nottingham and I tried to arouse the profession and the public to this evil and published a joint paper in your journal on plumbism from the ingestion of diachylon as an abortifacient.[1] For the purpose of that paper I made inquiries from leading members of the profession in all the large centres of population in the United Kingdom, and at that time I was able to write that "at Newcastle-on-Tyne it appears to be quite unknown," whilst in and around Sheffield I obtained records of about 200 cases in two years. Sir Thomas Oliver's cases are dated 1911, so that within five years it has travelled far, but by so doing has happily secured us a strong champion. His statements as to the original place of origin of this evil, and his references "from memory" to the names of those who first brought it to light, are somewhat meagre and require considerable modification. They omit the names of some who have spent considerable time and trouble in trying to get this practice stopped. Some of those who were most active are, unfortunately, no longer with us, and I am sure Sir Thomas would be the first to desire that their work should not be forgotten. The earliest cases recorded in literature occurred not in the Potteries but at Leicester, and were published by the late Dr. F. M. Pope in this JOURNAL (1893, vol. ii, p. 9). From then onwards cases were from time to time reported by Crooke of Birmingham, Bell Taylor, Ransom, Scott, Jacob and Trotman of Nottingham, Wrangham of Leicester, Layton of Walsall, and others. Leicester and Nottingham were the chief seats of the trouble. It did not spread north to the Sheffield district until soon after the beginning of the new century. From 1902 onwards the number of cases increased very rapidly, and at the Yorkshire Branch of the British Medical Association meeting at Bradford in January, 1905, I was able to record no fewer than 30 cases I had seen personally.[2] The evil became so crying in the Midlands that in 1906 Ransom and I determined to publish a joint paper (referred to above), and to take such other steps as we could to awaken interest in the subject, and induce the authorities to take action if possible.

We succeeded in getting the British Medical Association to appoint a special committee of inquiry, before which Drs. Pope, Ransom, and myself appeared and gave evidence. The suggestions we then made were chiefly: (1) That diachylon should be placed on the poisons schedule, and (2) that all cases of plumbism in women should be compulsorily notified. We also approached the various members of Parliament representing the districts affected, and they promised their help. But it was largely in vain. In spite of reports from coroners of deaths from this cause, several of which have occurred in this district; in spite of prosecutions at Nottingham and Sheffield, in which vendors of these pills were given long sentences of penal servitude; and in spite of the strong resolutions of the British Medical Association Committee, the reply from the authorities was that "nothing could be done."

So the evil continues. Fresh cases are constantly cropping up; within the last month we have had two at the Sheffield Royal Hospital. The numbers in this district are not so great as they were a few years ago for the simple reason that trade is booming and wages are good. But let us once get back to a period of trade depression such as there was about 1903 to 1906, and the number of

[1] BRITISH MEDICAL JOURNAL, February 24th, 1906.
[2] BRITISH MEDICAL JOURNAL, March 18th, 1905.

cases will go up by leaps and bounds unless something drastic is done. For the misfortune is that it is a simple and effective means of killing the fetus, and the public know it! How great is the price to be paid in health and suffering they do not care.

Some months ago I received an invitation to read a paper on this subject in the Section of Medical Jurisprudence at the International Congress of Medicine to be held in London next August. Possibly with the support of Sir Thomas Oliver's weighty influence it might be possible to get that Section to express an opinion on the subject which would arouse the authorities to action more effectively than we have hitherto been able to do. Any movement in that direction would have my personal active support, for the present state of things is an intolerable scandal.

In conclusion, I should like once more to tender my thanks to Sir Thomas Oliver for his powerful and inspiriting paper.—I am, etc.,

Sheffield, June 9th. ARTHUR J. HALL.

SIR,—Now that Sir Thomas Oliver has lent the weight of his authority to the effort to stamp out this deplorable traffic, it is to be hoped that an earnest endeavour may be made to urge upon the Government the imperative need of an attempt to repress it. Notification, not merely of industrial, but of *all* cases of blood poisoning, would, I believe, be of real service, as Sir Thomas Oliver suggests. It was a proposition I also put forward twelve years ago in this JOURNAL (vol. ii, 1901). But to be effectual it is necessary that medical men should be ready to recognize the different pictures which diachylon produces. I could almost wish that it might be raised to the dignity of a separate disease, and have a heading all to itself in the textbooks of medicine.

Whenever a woman complains of (1) severe gastro-intestinal symptoms, with headache, weakness, and a lemon-coloured skin; or (2) presents symptoms and signs of a polyneuritis, not infrequently with ocular symptoms, I would say: Inquire into her menstrual history and look at her gums. The artist's signature will often unexpectedly be found there.—I am, etc.,

Bradford, June 10th. W. WRANGHAM.

ACUTE MENTAL HOSPITALS AND PSYCHIATRIC CLINICS.

SIR,—I do not think Dr. Stansfield would desire to claim a precedence in regard to the separate hospital idea in asylums which is not according to fact. He says that seventeen years ago he advocated the institution of acute hospitals in conjunction with the existing asylums, and fifteen years ago had this carried out at Bexley. Now in 1882, over thirty years ago, we instituted at the Royal Edinburgh Asylum such a separate hospital, with a nursing staff twice the strength of the ordinary wards, where, also, the probationers were trained. The Scottish Commissioners in Lunacy took up the idea warmly, and urged it on all the Scottish asylums. Montrose and Larbert Asylums followed in a few years, and soon almost every institution in Scotland had such hospitals. The Commissioners would, in fact, pass no new plans that had not separate blocks for new and acute and sick patients. As a matter of fact, England was somewhat slow in taking up the idea and carrying it out. Now it is a *sine quâ non* in every up-to-date institution all over the world. The medical idea is thereby sustained, and should pervade the whole treatment of the unsound in mind.—I am, etc.,

Edinburgh, June 9th. T. S. CLOUSTON.

RHEUMATOID ARTHRITIS.

SIR,—Dr. Chalmers Watson does not understand what I mean by parting with the substance for the shadow. Well, I suppose I should have recognized the fact that he is a Scotsman (some of my friends object to being called Scotchmen even when they take the barley-bree), but to make up for my apparent lack of perception I shall now proceed with a surgical operation. I was under the impression that I had given him a tangible cause for rheumatoid arthritis, but he immediately throws that to the one side and sets up in its place an imaginary bacterium of whose nature, or even existence, he offers no proof, because he thinks that such view is "most consistent with available clinical and pathological data." My idea of a bacterial disease is one which comports with all the postulates of Koch, and when Dr. Chalmers Watson, or any one else, has proven to the satisfaction of any first-class bacteriologist, such as Sir Almroth Wright, that he has conformed to all the postulates of Koch, and has really discovered a specific germ which causes what we at present understand by rheumatoid arthritis, then I shall gladly welcome the discovery and praise the discoverer. It is most fortunate that Koch laid down his postulates, otherwise we would have been overwhelmed with numerous varieties of specific bacteria which would have been discovered by highly imaginative clinicians. The so-called practical clinician of the present day is a most hopeless individual; when he runs up against a difficulty he stares it in the face and passes on.

It is just over twenty years since Schüller[1] found, in his observations on 116 cases of "chronic rheumatic arthritis," "short thick bacilli, the central portions of which are notched or grooved, while the poles present a collection of bright granules." Cultures of these bacilli were made, and when injected into rabbits they produced non-suppurative joint affections; similar organisms were removed from the joints of the affected rabbits, and these bacilli could again be cultivated, and the fresh cultures again reproduced the disease in other rabbits. This is much better proof than anything that my present opponents offer. Fortunately or unfortunately these bacilli are not found in all cases of chronic arthritis, and there are many other organisms which set up an inflammation in the synovial membranes of the joints, such as the gonococcus, the pneumococcus, and the meningococcus.

In 1886 Dr. Alfred Mantle of Harrogate found micrococci and short bacilli in the knee-joints and blood of 16 cases of acute rheumatism. In 1892 Sahli found the *Staphylococcus citreus* in the joints of a patient who died from acute rheumatism. In the present day there are several bacteriologists who claim to have isolated a diplococcus or streptococcus which they say is the cause of rheumatic fever; but they are not agreed among themselves, and each one claims that his particular coccus is the specific one. The so-called practical clinician goes much further. He does not trouble his brains about any specific organism; it is sufficient for him to find, or rather get someone else to find for him, a streptococcus in the faeces, if it cannot be found elsewhere, and forthwith the patient is submitted to a prolonged course of a so-called autogenous vaccine. This is what they call scientific medicine, but the pitiable tales which the patients have afterwards to tell are somewhat disheartening.

Dr. Chalmers Watson thinks that I have "not quite grasped his position"; but candidly I think that his bacterial position is so nebulous that there is nothing to grasp. Not content with the cultivation of his own imagination, he wants to make your readers believe that I am in the same happy frame of mind though I do not know it. Because I would clear away all offending organisms, whatever their nature, that are in the outposts, and because I say that there are often acid-forming organisms both in the mouth and the stomach, Dr. Watson thinks that I must really believe in the bacterial origin of rheumatoid arthritis, and there is no use in my denying the soft impeachment. Be that as it may, I shall remain obdurate until Dr. Chalmers Watson can show me how these organisms can be made to comport with Koch's postulates. From my point of view it does not matter very much what the acid is so long as it does not, like most of the mineral acids, form stable neutral salts, and so long as it has a greater affinity for calcium than for the alkaline metals. Nor does it matter very much whether the acid is generated in the stomach or introduced from without. It is a question both of calcium starvation and calcium elimination.

His conclusion about the "instructive correspondence" is really past a joke, and I must bring my operation at once to a close. To be so blind he must be very much overweighted with the importance of his own contributions. In my opinion I have never previously in the whole course of my existence had to refute so much unadulterated twaddle. Of course, it would be downright ingratitude not to exempt Dr. Chalmers Watson from this sweeping statement, and I can really assure him that I not only exclude him but I really never meant to

[1] *American Journal of the Medical Sciences*, 1893.

include him. On the contrary, I must express to him my thanks for his high appreciation of my work, which it appears only requires a few finishing touches by his master-mind to make it a perfect work of art. Of course, neither do I include my friends and supporters, Dr. George E. Bowker and Dr. Percy Newell.

I have had two letters from another Edinboro' Scot who has not a good word to say for my work. He is a medical man of high qualifications and a chronic rheumatic to boot. He thinks that I have not proved my theory of acidosis, that the medical public are beginning to view communications as to cures with suspicion. He is especially irate at my condemnation of oatmeal in this disease, on account of its decalcifying effects, and, funnily enough, he takes me for a brither Scot. He indignantly asks, "Are we invertebrate?" (Some of them are, though I do not blame the oatmeal.) He suggests that the Londoner who drinks hard water should have no rheumatoid arthritis. He wants thousands of cases from which he can draw his inductions. (By that time he will probably have found that the wicked have ceased from troubling and the weary are at rest.) He suggests that if I have not time myself to examine the blood for acidosis I should get some young Liverpool chemist to do so—of course, he magnanimously says, under my supervision—but, Scotch like, he makes no offer of a contribution towards the expenses. He himself "used Wright's method some ten or twelve years ago, without much result," using sensitive litmus as his indicator. I thought my account of the Scottish chemist who found sulphuric acid and the suboxide of copper in Scotch whisky would have saved me from this criticism. This gentleman knows very well that the blood is practically always alkaline, and the plasma more so than the serum. If the blood were acid even to sensitive litmus it would cease to take up any lime from any tissues but itself, because the heart would immediately stop. It is not a question of free acidity but of diminished alkalinity, and an increase in the acid radicles which are loosely united with bases from which they readily part in the presence of lime. The acid of the stomach is always united with some base when it enters the blood. If you add to a strong solution of sodium salicylate some carbonate of lime or magnesia you will get an intensely alkaline solution of caustic soda caused by the acid radicle laying hold of the calcium or magnesium. He says:

> The medical public are thoroughly suspicious of the various nostrums held up to them—fresh air cures, radium, living microbes for injection, ionization, etc. . . . I may state that I am perfectly familiar in my own person with a two years' trial of free ingestion of rhubarb, acid, acid fruits to act the popular view, while of late I tried and have had tried on myself vaccines and serums—results *nil*. I should, however, be sorry to forego oatmeal, once chief of Scotia's food.

Poor man, I am sorry for him; the treatment seems to me worse than the disease.

I have read Dr. Preston King's letter about half a dozen times, and I really find very little to answer except his peculiar way of mixing up the cause and the treatment. I can again assure him that the first part of the treatment is to remove the cause, and there is not much use in giving lime salts until you have removed the cause which is rapidly eliminating them.

I have plainly told Dr. Craig that I did not believe that Sir Robert Christison ever uttered the statement which he (Dr. Craig) attributed to him. He makes no direct attempt to answer this, and prudently drops the calcium-laden straw. Instead, he tells us that:

> At a meeting of the Balneological and Climatological Section of the Royal Society of Medicine in April of this year, when the gentlemen present consisted of physicians to whom, if there be any truth in the statement that "an ounce of practice is worth a ton of theory," we must look for guidance in the treatment of this disease, one of the speakers, on advising copious water drinking for rheumatoid arthritis, stated that "the presence or absence of some lime is of no importance whatever," confirming Sir Robert Christison's wise statement of forty years ago.

The only report of this meeting of the Section of Balneology and Climatology which I can find appeared in the BRITISH MEDICAL JOURNAL of May 3rd, 1913, p. 940, and in your report there is not one word about rheumatoid arthritis or lime. In fact the discussion was on "the significance, treatment, and prognosis of high blood pressure." From what I know of some of the gentlemen who took part in the discussion, I am sure they would be among the first to repudiate the old stupid wheeze about an ounce of practice and a ton of theory. Not only does he fail to substantiate the view with which he credits Sir Robert Christison, but he also fails to give any reference to the lime salts having been used and discredited, as he says, in this disease. Personally I have not come across any ancient or modern textbook in which any mention is made of the use of lime salts in rheumatoid arthritis. In a previous letter he stated:

> So far as I can learn, about a third of the practitioners of Britain are at present treating this disease with serums, with results much superior to what were obtained by the ancient treatment recommended by Dr. Luff and Sir James Barr.

It is well known that with the exception of antidiphtheritic and antitetanic serums, there is now very little sale for any of the serums, and the only serum that I know of on the market for rheumatism is an antistreptococcus serum prepared by Burroughs, Wellcome, and Co. Again Dr. Craig says, "Are we to believe that neither of the writers has any experience of the antirheumatic serums now in common use?" As there is no serum in the market under such a name perhaps he will tell us something about it.

He wants to know what I mean when I say that the finely stencilled lines of absorption occurred at the edges of the bones where the blood supply comes from the periosteum. I mean exactly what I say, and I can put the facts in no plainer language. I have no doubt Dr. Thurstan Holland will be pleased to show him the plates which he exhibited to me.—I am, etc.,

Liverpool, May 31st. JAMES BARR.

SIR,—There must be many of your readers who cannot but deplore the tone of Sir James Barr's recent letters on the subject of rheumatoid arthritis, and who think that the dignity of the President of the Association would be more suitably upheld by a style of a less bombastic and self-satisfied character.—I am, etc.,

Brighton, June 2nd. JOHN C. UHTHOFF.

EVIDENCE FOR AND AGAINST TUBERCULIN.

SIR,—I am much obliged to Dr. J. Stavely Dick for his courteous and ingenuous reply (June 7th, page 1249), but I fail to see that there is any impropriety in treating one set of patients with tuberculin and another set without tuberculin and comparing the results. If the former set gave the best results, then the latter could also have a course of tuberculin if desired. I do not think the "controls" in such a trial have any particular grievance.

As to bovine tuberculosis, I can only say: If it has been cured by bovine tuberculin, let us have the details of cases in which that result has been obtained.

Dr. Dick says, with regard to the real good obtained from appropriate doses of tuberculin, that his "favourable impressions have been based mainly upon increased energy and capacity for work . . . on returning relish for food . . . a feeling of well-being and brightness . . . on stationary or increasing weight. . . ." But I can assure Dr. Dick that I have seen all these improvements take place in patients undergoing sanatorium treatment without tuberculin. "In a number of cases," he adds, "there was no doubt whatever as to the pulmonary lesion having become quiescent." But even that result may (sometimes) be observed in cases treated only with fresh air, good food, rest, and regulated exercise. I quite agree with Dr. Dick that the patient's general condition (appetite, weight, strength, and feeling of well-being) has to be taken into consideration, as well as the physical signs in the chest. But I hold that if a patient with, say, a moist, crackling râle in one of his apices, still has his moist, crackling râle in the same place after a course of tuberculin injections, then he is not cured. If his appetite is good, and he is free from pyrexia, and his weight keeps up, we may conclude that the recuperative agencies in his system are in the ascendant, and that is a matter for satisfaction. But the active local mischief is still present, and, if the

resisting factors in the system fail, the disease reasserts itself, and the patient goes downhill.

I am of opinion that Dr. Batty Shaw's investigations are worthy of all praise.—I am, etc.,

Bellefield Sanatorium, Lanark, June 17th. JAMES W. ALLAN.

THE BIONOMICS OF THE RAT-FLEA.

SIR,—I see from your issue of May 31st that Mr. Strickland has questioned the correctness of Dr. Nicoll's explanation of the apparent lengthy fast of specimens of *Ceratophyllus fasciatus*.

I am, like Mr. Strickland, unfortunate in that my own breeding experiments with fleas, covering a period of two years, are not yet published. They will, I trust, be available ere long in the *Journal of Hygiene and Parasitology*. Meanwhile I can in a few words possibly throw some light on this particular question.

The egg period of this species occupies from about four to twelve days, according to the temperature, which is of course a most important factor. The *active* larval life may be anything from 10 to 114 days, and probably this is not the extreme limit in either direction. After the larva has spun its cocoon it may rest within it for over 400 days. The pupal period, so far as it is possible to determine, does not exceed about 10 or 12 days, but this is admittedly only a rough estimate. When the adult flea has shed the flimsy pupal envelope it does not always emerge from its cocoon, but may continue to rest for a longer or shorter period. As in the case of the pupal period, it is only possible to arrive at an estimate as to the length of time occupied by this rest—all the available evidence being circumstantial. I should not care to estimate it at more than two or three weeks, but it may be much longer.

Emergence is frequently in response to some mechanical stimulus, such as the disturbance of the box containing the cocoons.

Mr. Strickland's inability to find cocoons is, of course, beside the mark, as they must have been present, even if the fleas had emerged from them, unless the rubbish he refers to was not that from which the fleas had been bred, but was used as cover for adult fleas which had never been fed. He is correct, however, in concluding that the adult fleas are able to make lengthy fasts, but this appears only to be possible before feeding and breeding commences, while the fat bodies carried over from the larval period are unexhausted.

I have, however, no records of such lengthy periods as he suggests; under the most favourable conditions that I could devise the longest adult life without food was thirty-one days. This was when the fleas were put into a filter paper tube which was buried in sand kept at a low temperature (45° or 50° F.) in a cellar where the humidity was over 90. If allowed to bury themselves freely in the sand—the other conditions remaining the same—they were able to endure a longer period; the longest life noted was ninety-five days.

My own view is that the occurrence of adult fleas in breeding cages long after the host has been removed, is to be accounted for by the larval rest within the cocoon.—I am, etc.,

A. W. BACOT.

Entomological Department, Lister Institute, London, S.W., June 4th.

A CONSTITUTIONAL POINT.

SIR,—A constitutional position of interest especially to the members of our profession has just been created by the action of Mr. McKenna, the Home Secretary, and Sir Rickman J. Godlee, the President of the Royal College of Surgeons.

On March 18th, 1913, Mr. McKenna made a personal attack upon me by name in the House of Commons. On May 1st I wrote to him asking him to publicly withdraw his statements, they being from evidence in my possession inaccurate in several respects, and the same time giving him the proofs of these inaccuracies. Further correspondence ensued but without any material result.

Whilst this correspondence was still proceeding it came to my knowledge that Mr. McKenna had lodged a complaint against me at the Royal College of Surgeons without informing me that he was doing so or had done so. On discovering this I at once wrote to the President (Sir R. J. Godlee), and requested that a copy of the document or documents containing the Home Secretary's charges be furnished to me so that I might deal with them.

Sir R. J. Godlee, who did not reply until he received a letter from my solicitor, declined to accede to my request. This request I made not only as a Fellow of the College, but also as a citizen of a country which prides itself on the fact that every one who is accused is entitled to know at once exactly what charges are made against him with a view to being enabled to reply to them should he wish to do so.

I also wrote to Mr. McKenna, making the same request. He also, whilst admitting that he lodged charges against me, declined to inform me of the nature and detail of his accusations.

It appears to me to be extraordinary for a Minister of the Crown to make a complaint concerning a professional man's reputation without giving him notice, and further, for the President of our College to refrain in his turn from informing the professional man thus complained against that such charges had been made, and to refuse to disclose the nature of them when asked to do so.

I mention this incident as evidencing the pressing need for reform in the present constitution of the Royal College of Surgeons.—I am, etc.,

London, W., June 9th. VICTOR HORSLEY.

ANTIVIVISECTION.

SIR,—I, in company with the rest of the profession, have received a circular from the "Church Antivivisection League," in which we are asked to allow our names to be added to a list of doctors who do not believe in "vivisection." We are told in the circular that "there is a growing disinclination to believe that the medical man who countenances experiments on helpless animals will refrain from experiments on his equally helpless patients."

Our reward for allowing our names to be added to this list is evidently to be found in the following extract from the circular: "We are often asked by antivivisectionists for the names of antivivisectionist doctors in their respective neighbourhoods." It is to be hoped that none of our honourable profession will lend themselves to this form of touting. The list of doctors, it is stated, will be printed and circulated with the report of the league.—I am, etc.,

H. W. OGLE-SKAN, M.R.C.S., L.R.C.P.

London, N.W., June 9th.

MISS FRANCES POWER COBBE.

SIR,—My attention has been called to the following passage in an article, "The Ethics of Antivivisection," in your issue of May 3rd: "Miss Frances Power Cobbe made the strange boast that she loved animals by nature and her own kind only by grace." I think the quotation is not quite correct; certainly this was not said as a *boast*.

If, however, Miss Cobbe loved her own kind only by grace, she must have been abundantly endowed with it, for she spent her life in doing good to her fellow creatures. For many years she worked for the poor in their homes and in the workhouses; later she was instrumental in passing laws for the protection of women; and she was ceaseless, to the very end of her life, in her efforts to make all around her happy.—I am, etc.,

London, W., June 8th. HELEN L. COBBE.

*** Our authority for the statement to which Miss Cobbe refers is Sir Mountstuart Elphinstone Grant Duff's *Notes from a Diary*. Under March, 1899, there is the following entry: "Miss Cobbe," remarked Lecky, "used to say: 'I love dogs by nature; human beings only by grace.'" With this may be compared another passage in the same *Diary* (August, 1895), where it is recorded: "We spoke of Miss Cobbe, and Paul said, 'I got into frightful trouble with her once, in the most innocent way. I used the expression 'the lower animals.' 'Lower animals!' she said; 'I acknowledge no such distinction—unless, indeed, you refer to married men.'" We need not argue with our correspondent whether or not these things were said by way of boast. The tone and taste of the latter remark, we think, sufficiently indicate Miss Cobbe's feelings towards those at least of her fellow creatures who had the misfortune to belong to the male sex.

Public Health AND POOR LAW MEDICAL SERVICES.

THE NURSING OF THE SICK POOR.

THE Workhouse Nursing Association, of which H.R.H. Princess Christian is the president, recently submitted a memorandum to the Poor Law Orders Committee, suggesting amendments to several of the provisions of the Poor Law Institutions Draft Order now under the consideration of the committee, which, in the opinion of the association, would if adopted be retrograde rather than progressive as regards nursing administration in rural workhouse infirmaries and sick wards.

On June 4th the Hon. Mrs. John Talbot, a vice-president of the association and the chairman of the Executive Committee, together with Miss Gibson (late matron of Birmingham Infirmary), Mr. Henry Dixon Kimber (the honorary legal adviser to the association), and Miss R. V. Gill (the secretary), had a long interview with the Poor Law Orders Committee, as representatives of the association, in order to emphasize and explain more fully the views of the Workhouse Nursing Association on the seriousness of their objections to several matters to which attention had been drawn in the memorandum, and to urge the importance of giving effect to certain alterations in the proposed Order which were recommended by the association.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on May 21st.

Brown Animal Sanatory Institution.

The annual report of the Superintendent of the Brown Animal Sanatory Institution for 1912 was presented. It stated that 5,546 animals had received treatment at the hospital as out-patients and 470 as in-patients. The five lectures required under the will of the late Mr. Brown had been delivered by Mr. Twort, M.R.C.S., L.R.C.P., the Superintendent, the subject selected being a comparative study of tuberculosis and Johne's disease. The report gave a list of ten investigations which had been carried out by different workers in the laboratories during the year.

Anatomy and the B.Sc. Honours Degree in Anthropology.

It was resolved:

That the Examination in Anatomy forming part of the Second Examination for Medical Degrees, Part II, be accepted as the Examination in respect of Anatomy taken as a subsidiary subject for the B.Sc. Honours Degree in Anthropology for Internal and External Students.

External Council.

Sir William Collins has been added to the Council for external students for the remainder of the year 1912–13, in the place of the Rev. Professor W. H. Bennett, resigned.

Lecture by Professor Benedict.

A special lecture on the work of the Carnegie Nutrition Laboratory in Boston will be given in the Physiological Laboratory of the University on Friday, June 20th, at 5 p.m., by Professor F. G. Benedict, Director of the Carnegie Laboratory. The lecture, which will be free, will be addressed to advanced students of the University and others interested in the subject.

Rogers Prize.

The subject of the essay or dissertation for the Rogers Prize, 1914, will be the nature of pyrexia and its relation to micro-organisms. The latest date for the reception of essays is April 30th, 1914. Copies of the regulations for the award of the prize can be obtained on application to the Academic Registrar.

Officers' Training Corps.

The annual inspection of the University Contingent of the Officers' Training Corps will be held by Brigadier-General D. Henderson, C.B., D.S.O., in Hyde Park, on Saturday afternoon, June 28th. Applications for reserved seats should be addressed to the Adjutant at the University.

London (Royal Free Hospital) School of Medicine for Women.

Mr. F. D. Acland, M.P., has accepted the chairmanship of the Council, and Mrs. Willey, M.D., M.S., has been appointed Lecturer in Midwifery to succeed Mrs. Scharlieb, M.D., M.S., resigned.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS.

IT appears that neither of the retiring members of the Council, Mr. Edmund Owen and Mr. Golding-Bird, seeks re-election. The six candidates are Mr. J. E. Lane of St. Mary's Hospital (Fellow, December 14th, 1882; Member, 1880); Mr. L. A. Dunn of Guy's Hospital (Fellow, June 12th, 1884; Member, 1882); Mr. Jonathan Hutchinson of the London Hospital (Fellow, November 13th, 1884; Member, 1880); Mr. H. B. Robinson of St. Thomas's Hospital (Fellow, June 9th, 1887; Member, 1883); Mr. Walter G. Spencer of the Westminster Hospital (Fellow, June 9th, 1887; Member, 1885); and Mr. H. J. Waring of St. Bartholomew's Hospital (Fellow, October 15th, 1891; Member, 1890).

There are four vacancies to be filled, and the candidates first and second on the poll will hold their seats for the full term of eight years, namely, till July, 1921. The substitute for the late Mr. Clinton Dent, re-elected in 1911, will fill up the remaining six years, retiring in 1919, whilst Mr. Bruce Clarke's substitute will serve on the Council for two years, as Mr. Clarke was elected in 1907. No provincial Fellow has come forward on this occasion.

The Services.

INDIAN MEDICAL SERVICE.

ANNUAL DINNER IN LONDON.

THE customary annual dinner of the Indian Medical Service in London was held in the Hotel Cecil on June 10th, when the Director-General of the Indian Medical Service, Sir C. P. Lukis, K.C.S.I., was in the chair, and the guests were: The Marquess of Crewe, Secretary of State for India, Sir Thomas W. Holderness, Under Secretary of State for India, Sir Francis Champneys, President of the Royal Society of Medicine, Sir W. Watson Cheyne, Bart., President of the Medical Society of London, and the Editors of the BRITISH MEDICAL JOURNAL and *Lancet*.

After giving the toasts of the King and Queen and other members of the Royal Family, Sir C. P. Lukis said that he had been requested to break through the rule against making speeches after the annual dinner in order to mark the honour done to the service by the presence of the Secretary of State. Speaking after four years' experience as Director-General, he asserted that during that period steady progress had been made, and that in many respects the conditions of service had been greatly improved. Annual increments of pension after seventeen years' service had been granted, the fee rules, to which many officers took exception, had been modified in a most satisfactory manner, brevets had been awarded for distinguished service other than in the field, the rules for accelerated promotion had been amended, large grants had been given for financing medical research and for the establishment of a school of tropical medicine in connexion with the Calcutta Medical College, the King George Medical College had been opened in Lucknow, and a medical school for the central provinces was to be started in Nagpur. Three new appointments, moreover, had been sanctioned, namely, a whole-time professorship of pathology at Bombay, a residency surgency at Seistan, and a directorship of the Pasteur Institute in Burma. The Indian Government had shown in a most practical manner its appreciation of the value of the services of individual officers. Formerly it was a common complaint that medical officers did not receive a fair share of honours and that professional merit met with no recognition. This might have been true in the past, but was so no longer. At no time in the history of the service had honours and rewards been given to it so liberally as during the past few years, and he mentioned the names of Surgeon-Generals Branfoot, Charles, and Bannerman, Colonel Giffard, and Majors Glen Liston and Leonard Rogers as proofs that professional merit did not pass unrecognized. He denied that the men now entering the service were not up to the former standard. He found that, taking the service as a whole, 71 per cent. of the officers possessed higher medical qualifications, whilst the average for lieutenants was 73.5 per cent., or 2.5 per cent. higher than the average for the service as a whole. That afforded clear proof that there was no falling off in the standard, and from his experience as Director-General he could vouch for the fact that it had many exceptionally brilliant men amongst its younger officers. The Indian Medical Service still offered a magnificent career to men of the right stamp. Changed conditions would undoubtedly arise and competition would be keener, but this need cause no alarm. One of the most remarkable developments of recent years had been the sanitary awakening of India, and when the medical needs of that vast country were remembered, the belief was justifiable that ample room would be found both for the Indian service, for the sister service, and for the independent medical practitioner. In conclusion, he proposed the health of the Secretary of State for India, expressing to him the thanks of the service for the sympathetic consideration he had shown in regard to all matters affecting either the general welfare of the service or personal interest of individual officers.

The Marquess of Crewe, in response, expressed his general agreement with the Director-General's view of

the prospects of the service and his deep sympathy with its work and alms. He referred to signs of the awakening of India to the meaning of sanitation, and to the great scope for work in the future which this opened up. He agreed that the large number of Indian gentlemen who were now entering the medical profession and making themselves thoroughly competent members of it must affect the Indian Medical Service, but he held strongly that there was room for both.

The following is a list of officers who attended the dinner, the number being unusually large:

Surgeon-Generals.—Sir A. M. Branfoot, K.C.I.E., Sir R. Havelock Charles, G.C.V.O., J. Cleghorn, C.S.I., J. P. Greany, G. Hay, Sir L. D. Spencer, K.C.B.

Colonels.—C. W. Carr-Calthrop, G. W. P. Dennys, D. ffrench-Mullen, B. B. Grayfoot, G. F. A. Harris, P. Hehir, D. E. Hughes, C. C. Little, M. D. Moriarty, R. D. Murray, A. Porter, P. A. Weir.

Lieutenant-Colonels.—W. Alpin, J. Anderson, R. J. Baker, R. H. Castor, W. H. Cadge, J. T. Calvert, D. G. Crawford, P. J. Freyer, C. R. M. Green, H. Greany, E. A. W. Hall, J. Jackson, E. Jennings, E. R. Johnson, D. F. Keegan, M. A. Ker, D. P. MacDonald, W. Molesworth, T. R. Mulroney, W. H. Ogilvie, K. Prasad, W. G. Pridmore, J. J. Pratt, W. H. B. Robinson, W. H. Thornhill, D. Warliker, H. R. Woolbert, H. G. L. Wortabet.

Majors.—W. R. Battye, R. Bonstead, P. F. Chapman, S. R. Christophers, De V. Condon, A. T. Gage, A. A. Gibbs, C. M. Goodbody, E. Hutcheson, H. F. G. Hutchinson, J. H. Hugo, W. Lethbridge, E. A. C. Matthews, J. H. MacDonald, F. O. N. Mell, O. St. John Moses, C. R. Pearce, E. L. Perry, Sir R. Ross, K.C.B., F.R.S., S. A. Ruzzak, R. F. Standage, J. W. Watson, J. M. Woolley.

Captains.—F. F. Barnard, C. H. Barber, F. Powell Connor, W. T. Finlayson, C. A. Gill, D. P. Goll, D. L. Graham, J. B. D. Hunter, H. H. G. Knapp, J. L. Lunham, G. E. Malcomson, E. Selby Phipson, R. D. Saigol, H. B. Steen, J. Taylor.

Lieutenant.—Bennett Hance.

NEW WARRANT.

A Warrant dated June 3rd, 1913, cancelling and replacing the Warrants of March 13th, 1908, and August 8th, 1911, has been issued. The following notes indicate the general substance of the several paragraphs:

1. Provides that substantive rank shall be as follows: Surgeon-General ranking as Major-General, Colonel, Lieutenant-Colonel, Major, Captain, Lieutenant; the Director-General, I.M.S., is to hold the substantive rank of Surgeon-General, but may rank as Lieutenant-General if approved by the Secretary of State.

2. An officer will not be permitted to remain in the service if at any time during the first three years from the date of his first commission his retention therein is, in the opinion of the Secretary of State, undesirable.

3. A lieutenant is eligible for promotion to the rank of captain on completing three years' full pay service if he has previously passed the required examination and is in all other respects qualified and recommended. If an officer has not passed the prescribed examinations he may, if he has not had a reasonable opportunity of passing them, be provisionally promoted, subject to his passing the exxminations when an opportunity is afforded.

4. A captain is eligible for promotion to major on completing nine years' full pay service in the rank of captain. The period may be reduced by six months if an officer produces satisfactory evidence of progress in any branch of knowledge likely to increase his efficiency. If a captain is prevented by the exigencies of service from obtaining an opportunity of qualifying for such accelerated promotion, the concession will remain open to him for four years after his promotion to the rank of major in the ordinary course, but any antedate granted will be without adjustment of pay.

5. A major is eligible for promotion to the rank of lieutenant-colonel on completing eight years' full-pay service in the rank of major, including any period covered by antedated promotion without adjustment of pay.

6. Time on half pay not exceeding one year will be reckoned as service for promotion under Articles 3, 4, and 5, if removal to half pay has been in consequence of medical unfitness caused by duty, military or civil.

7. For distinguished service in the field or for meritorious or distinguished service other than in the field a captain after six years' service and a major or a lieutenant-colonel may be promoted to the next higher rank by brevet.

8. A certain number of lieutenant-colonels may be specially selected for increased pay for ability and merit.

9. Promotion from the rank of lieutenant-colonel with increased pay to colonel and from colonel to surgeon-general will be given by selection for ability and merit.

10. A lieutenant-colonel may also be promoted to the rank of colonel, and a colonel to the rank of surgeon-general for distinguished service in the field. "In any case the officer shall remain supernumerary in the higher rank until the vacancy to which, in the ordinary course, he would have been promoted, or, in the case of an officer promoted to the rank of colonel, until selection for the rank of surgeon-general."

11. Exchanges between officers of the I.M.S. and the R.A.M.C., of the same rank and below that of major, and transfers of officers below the rank of major may be permitted on conditions, one of which is that the officer transferred is placed for seniority below that of officers holding the same rank at the time of his transfer, and shall not be promoted until the officer next above him is promoted, or has been refused promotion.

12. Medical officers will be placed on the retired list at the following ages: Director-general 62, surgeon-general and colonel 60, lieutenant-colonel and major 55. A lieutenant-colonel who entered before April 1st, 1911, and who has been specially selected for increased pay if he attains the age of 55 before becoming entitled to the pension for thirty years' service, may be retained until the completion of such service, or in any special case an officer may be continued in employment.

13. An officer appointed after September 11th, 1890, who may retire on pension before completing thirty years' service, will be liable till he completes 55 years of age to be recalled to duty in case of emergency.

14. Six of the most meritorious officers of the Indian Medical Service on the active list shall be named honorary physicians and honorary surgeons to the King, and they shall relinquish such appointment on retirement. On appointment as honorary physician or honorary surgeon an officer under the rank of colonel may be promoted to the brevet rank of colonel.

VOLUNTARY AID DETACHMENTS.

HUNTINGDONSHIRE on May 12th was the scene of a sham fight to which special interest attached by reason of the co-operation of three Voluntary Aid Detachments; indeed, the work of the day was specially arranged to that end by Lieutenant-Colonel E. J. Cross, M.D., the officer commanding the Eastern Mounted Brigade Field Ambulance. Early in the morning a detachment of the 5th Bedfordshire Regiment carried out a sham fight against an invading force near Weston Wood, and incurred 75 casualties, small and great. News of a heavy engagement was then dispatched to a wagon and tent station established by the field ambulance mentioned, and meantime the men applied their first aid dressings themselves, each wounded man having a label attached to him descriptive of his injury. Soon after light wagon and stretcher parties from the field ambulance arrived, and collecting the wounded took them to the wagon station, where they were treated and classified. The tent hospital was then cleared for further work by handing over the patients to the Voluntary Aid Detachments which had established hospitals at three farms; and one of these hospitals was subsequently evacuated on receipt of information that the enemy was close at hand. Each of the Voluntary Aid Detachments turned out fully supplied with doctors, nurses, pharmacists, bearer squads, wagon drivers, and transport officers, and all members had an excellent opportunity of seeing exactly the sort of work they would have to do in actual warfare. The medical men engaged during the day were Lieutenant-Colonel E. J. Cross, Captain W. Archibald, and Lieutenant G. C. Kay Sharp, of the Eastern Mounted Brigade Field Ambulance; while Drs. Robinson, Harrisson, and Williams were in medical charge of the Voluntary Aid Detachments.

Obituary.

JAMES HENRY TARGETT, M.S., F.R.C.S.,

OBSTETRIC SURGEON, GUY'S HOSPITAL.

IT is with great regret that we have to announce the death of James Henry Targett, at the age of 51, after a long illness. He was born in Wiltshire, and went to school for two years at Warminster. Owing to delicate health his education was continued with a private tutor at Salisbury. This frailty of constitution attended him throughout, and for this reason, perhaps, the energies that most men devote in part to outside pursuits were by him spent entirely on subjects in connexion with his profession.

He entered Guy's Hospital as a student in October, 1878. He graduated M.B.Lond., with honours in forensic medicine in 1883, the B.S. with honours in 1885, and M.S. in 1887. He took the diploma of F.R.C.S.Eng. in 1886. He was appointed surgical registrar at Guy's Hospital in 1885, and held this post till 1887, when he became assistant curator to the museum. In 1889 he was appointed demonstrator of anatomy, and in 1895 demonstrator of surgical pathology and morbid histology. In 1897 he became obstetric registrar and tutor, and assistant obstetric physician the year following. In 1903, on the retirement of Dr. Galabin, he became obstetric physician, the title of the post being changed to that of obstetric surgeon when he became the senior in the department.

During the earlier years of his connexion with Guy's Hospital he was doing much work outside. All through his career he had a strong bent towards pathological anatomy, and in this subject he became deservedly a recognized authority. Following on his curatorship at

Guy's he was appointed pathological assistant to the Museum of the Royal College of Surgeons in January, 1888, Sir Frederic Eve being at that time curator. He succeeded to the post of curator in 1890, and held it till March, 1897. One who knew his work there speaks of him as an able and energetic curator, who added a large number of specimens to the collection, and by his tact made many people friends to the museum. As a writer of reports, whether clinical or pathological, he was probably unequalled. He wrote apparently with ease, and could at once and in the simplest terms give a clear picture in words of any specimen he had to describe. During this period of his work he contributed numerous papers to the *Transactions* of the Pathological Society, of which he was secretary in 1895 and 1896. He edited appendices to the catalogue of the Royal College of Surgeons, and gave the Erasmus Wilson Lectures on pathology in 1893 and the two years following. He was also holding appointments as assistant surgeon at the Evelina Hospital, and later as surgeon to out-patients at the Samaritan Free Hospital. We may gratefully recall that during this period of his career he gave his assistance to this JOURNAL, contributing many reviews on pathological subjects.

Following on these years devoted in the main to pathology, came the time when his energies were absorbed mainly in his clinical work as an obstetric surgeon. And here the interest in and devotion to his work that characterized him throughout earned for him before very long a recognized and honoured position. In 1910 and 1911 he was secretary to the Obstetrical Society.

His was a charming personality. Kind and gentle in disposition, he was as slow to take offence as he was incapable of giving it. No man had a more honourable and upright standard of life always before him. He never spared himself when work was concerned. His energy at times seemed feverish, and he probably wore out a system frail from the commencement. In 1911 he underwent an operation for appendical abscess, and his health no doubt suffered further from the sad loss of his only boy in that year. The illness which terminated fatally was of long duration. He was taken ill in September, 1912, and it was not till Tuesday, May 27th, 1913, that the end came.

J. LLOYD THOMAS,

DEPUTY SURGEON-GENERAL, R.N.

WE have to record with regret the death of Deputy Surgeon-General John Lloyd Thomas; it took place at his residence, Penmon, in the Isle of Anglesey. During his services in China he contracted sprue, which not only rendered him unfit for active work for long periods during several years, but seriously undermined his constitution, and no doubt contributed to his untimely death.

John Lloyd Thomas was born on September 3rd, 1856; he received his medical education at the Middlesex Hospital and Queen's College, Birmingham, and was for a period obstetric house-surgeon to the Queen's Hospital in that city. He entered the Royal Navy Medical Service in February, 1884, and served first in the *Temeraire* on the Mediterranean station, and afterwards from 1887 to 1889 on the *Britannia* in the Home Fleet. In 1889 he went to the West Indies in the *Bellerophon*, and from May, 1891, to April, 1892, was at the Jamaica Hospital in special charge of yellow fever cases; and in 1893 he wrote a practical essay on yellow fever which received high commendation. In 1894 he went to China in the *Porpoise*, and in the following year attended the wounded Chinese soldiers and sailors at Chefoo during the China-Japanese war; his services were favourably noted, and he was promoted staff surgeon in 1896. After a term of service from 1897 to 1899 in the Royal Naval Barracks, Portsmouth, he went out again to China in the *Endymion* in 1899. In the following year he served with the second Peking Expedition, and the excellent health of the brigade was attributed in a large measure to the sanitary arrangements made under his supervision. He was specially promoted fleet surgeon for these services, and received also from the Emperor of China the Order of the Double Dragon, first division of the third class. He came home in 1902, already unfortunately suffering from the disabling disease which was to shorten his life. After a somewhat prolonged period of sick leave he so far recovered that, with the aid of his cheery temperament and sanguine outlook on life, he was able to do a good deal of public work, serving on the Council of the British Medical Association as a representative of his service; acting as President of the Navy, Army, and Ambulance Section of the Annual Meeting of the Association in 1903, and representing the Admiralty at the meeting of the Association of Military Surgeons, U.S.A., in 1905. He served at the Royal Naval Barracks, Chatham, in 1906–1908, and for the two following years in the drill ships *Daedalus* and *Eagle*. He retired in September, 1911, with the honorary rank of Deputy Surgeon-General, and went to reside at Penmon, Anglesey, a county in which he had shortly before served the office of High Sheriff.

WE regret to record the death of Dr. CHARLES DALLEY NUTTALL, of St. Albans, on June 1st, after a long illness. Born in Leicester, and a member of a family connected for several generations with the profession of medicine, Dr. Nuttall was a student of St. Bartholomew's Hospital, and became M.R.C.S., L.R.C.P. in 1884. Subsequently he acted for a considerable period as clinical assistant at the City of London Hospital for Diseases of the Chest, and then settled in practice in his native town, where he was surgeon to the provident dispensary, and acquired a considerable practice. After some years he broke down in health and gave up work altogether for a time, but later on took up a practice of a lighter kind in St. Albans. The improvement in his health was, however, only temporary, and for the last three years he had done very little work. During his residence in Leicester Dr. Nuttall was a well-known figure in the hunting field, and when in good health frequently played an official part at athletic meetings in different parts of the country. As a young man he was an excellent performer on the running path, his best distance being the quarter mile, and it was largely due to his abilities in this direction that St. Bartholomew's became the holder of the Inter-Hospitals Challenge Cup in the early Eighties. Dr. Nuttall, who married the eldest daughter of the late Dr. J. St. Thomas Clarke, of Leicester, is survived by his wife, but left no children.

DR. LYTTELTON STEWART FORBES WINSLOW, who died on June 8th in his seventieth year, was a son of Dr. Forbes Winslow, who for a number of years was a leading authority on insanity. He was educated at Rugby and Cambridge, where he took the M.B. degree in 1870. He was also D.C.L. of Oxford and LL.D. of Cambridge. He appeared as an expert witness in many trials both in this country and in America, and wrote a number of articles on subjects connected with his province of practice. In 1910 he published an autobiographical volume entitled *Recollections of Forty Years*, which was reviewed in the BRITISH MEDICAL JOURNAL of July 8th, 1911 (p. 76). His opinion on any case that happened to interest the public was apparently highly valued by some newspapers, but with his own profession it carried less weight. Dr. Forbes Winslow, who was twice married, leaves a widow and three sons and a daughter.

NEWS has been received in England of the sudden death at sea in the Far East of Dr. O. E. HIGGENS, of Earl's Court, S.W. Dr. Higgens, who entered the medical profession somewhat late in life, was a student at St. Mary's Hospital; he took the diplomas of M.R.C.S., L.R.C.P. in 1889, and graduated M.B.Durh. in the following year. Before entering the medical school he had been at Cambridge, where he was a scholar of Emmanuel College, and achieved first-class honours in the classical tripos of 1880. After filling at the hospital a number of resident appointments, he established himself in Holloway and practised there until some two years ago, when he moved to Earl's Court. His death, which took place in the 58th year of his age, was due to cerebral haemorrhage.

AT the recent examination for sanitary inspectors under the Public Health (London) Act, 1891, held by the Sanitary Inspectors Examination Board, twenty-one candidates, of whom twelve were women, passed.

A BILL restricting the sale and dispensing of cocaine and eucaine, their salts and preparations, has passed the New York State Legislature, and has been signed by the Governor. It is to come into effect immediately.

Medical News.

THE Royal Society of Arts has issued invitations to a conversazione at the Natural History Museum, Cromwell Road, S.W., on the evening of Tuesday, June 17th.

THE usual ladies' conversazione of the Royal Society was given on Wednesday evening last. Most of the objects had been shown at the first conversazione, but on this occasion the Antarctic drawings of the late Dr. Edward A. Wilson lent by his widow were displayed.

AN invention by Alderman John Whittaker now being tested at Rishton, near Blackburn, will, it is hoped, among other advantages, dispense with "shuttle kissing," a practice which, however small may be the danger of infection attached to it, is at best a dirty process.

THE annual luncheon of the Continental Anglo-American Medical Society, which is usually held during the annual meeting of the British Medical Association, will be held this year in London on August 7th during the meeting of the International Medical Congress.

MR. ARNOLD JAMES, who has been on the staff of the Metropolitan Hospital Sunday Fund for some years, has been selected by its General Purposes Committee to succeed the late Sir Edmund Hay Currie in the office of secretary.

THE Harben lectures of the Royal Institute of Public Health will be delivered by Professor J. Bordet of Brussels, at 37, Russell Square, W.C., on June 16th, 18th, and 20th, at 5 p.m. The first lecture will deal with anaphylaxis, the second with coagulation of the blood, and the third with microbian variability in relation to sero-diagnosis.

IN a paper in the *Journal of the American Medical Association*, Detwiler, of Omaha, states that he has repeated the experiments of E. H. Ross with the jelly method and has examined scrapings from chancres, the peripheral blood and fluid squeezed from punctured lymph-nodes of syphilitic patients, and has found the parasites and followed most of the phases described by Ross.

WE understand that there has been no fresh cases of cerebro-spinal meningitis at Westerham or in Kent. Dr. Tew, M.O.H. for West Kent, has reported the death of one of the patients at Westerham—a boy aged 11. The schools have been closed and disinfected, and certain books and articles used there destroyed. Complete arrangements have been made to deal with any future cases should they arise.

FRESH accommodation for the nurses is projected at the West London Hospital; they are at present scattered in several houses and rather crowded therein. The late Duke of Abercorn, who was for long the president of the hospital and very anxious to see the nursing staff properly housed, started an appeal fund for this purpose, and in view of these facts and as a tribute to his services, it is proposed to call the building, when erected, the Abercorn Home for Nurses. So far, only about a quarter of the £12,000 deemed to be necessary has been got together, and contributions, however small, will be gratefully received by the Chairman of the Abercorn Memorial Executive Committee, Lord Arthur Hill.

THE different di-electric capacities of Purbeck sand, chalk, and stone were demonstrated by Dr. Mahomed of Bournemouth, by means of an apparatus constructed by him, at a meeting of the Balneological and Climatological Section of the Royal Society of Medicine in that town on May 31st. Dr. Mahomed assumed that negative ions were given off by metals in a glowing state in the undercrust of the earth, and hence surmised that the di-electric properties of the earth would cause an induced positive charge in the atmosphere. He also showed some charts illustrative of the varying potential exhibited when electric currents passed from gravel and sand to chalk, and vice versa.

A CONVERSAZIONE was given at the Royal College of Surgeons of England by Sir Rickman and Lady Godlee on the evening of June 5th, and proved a great success. The theatre from 9.30 onwards was the scene of four successive exhibitions of the cinematographic pictures of big game in Africa, obtained by Mr. Kearton, and in the council room sundry historical specimens, the Hunterian manuscripts, and other objects of lay as well as professional interest were on view. In the conservator's room Dr. Keith provided a demonstration of microscopic specimens and of relics of prehistoric man; and in Room I of the museum Mr. Burne had on view a number of natural history specimens, while in Room III Mr. Shattock provided a corresponding collection of pathological specimens. Meanwhile, and throughout the evening, the Greenhill String Quartette discoursed sweet music, and refreshments were served in the library.

PENSIONS for its members and associate members have been provided by the governing boards of the Rockefeller Institute for Medical Research, New York, and have been financially secured by the generosity of Mr. John D. Rockefeller, who has for this purpose increased the endowment of the institute by a gift to it of securities amounting to about 500,000 dols. in value. The pension rules which have been adopted provide three-quarters pay pensions for members of the institute retiring at the age of 65 after fifteen or more years of service, and pensions of from one-half to three-quarters of full pay, according to the length of service, for members and associate members who retire at 60 years of age. There is also a provision for total disability after ten years of service, and for widows and orphaned children, at one-half the scale upon which members of the staff are pensioned.

THE fourth annual congress of the British Hospitals Association is to be held at Oxford in the last week of this month. It will be opened at 10 a.m. on June 26th by an address from the president of the congress, Sir William Osler, and a discussion on the National Insurance Act and its effect on the hospitals, with a view to the proposed amendment of the Act, will follow. In the afternoon of the same day a discussion on tuberculosis and the general hospitals will be introduced by an address from Sir Thomas Oliver, while on the next day (June 27th) a debate on the upkeep of hospitals will follow the reading of a paper on the subject by Mr. Keith Young, F.R.I.B.A. By permission of the Vice-Chancellor of the University the meetings will take place in the Examination Schools. In connexion with the conference a series of visits to places of interest has been arranged for Friday afternoon and Saturday. The business meeting of the association and the election of officers will take place on Friday. The present chairman is Dr. D. J. Mackintosh, of the Western Infirmary, Glasgow, and the secretaries are Messrs. Conrad Thies and A. Hayes, whose official address is 14, Victoria Street, Westminster.

THE dinner of the Durham University Medical Graduates' Association, which took place under the chairmanship of the President of the Association, Dr. Edridge-Green, on May 30th, brought together a large gathering, the guests including the Vice-Chancellor of the University (Sir George Hare Philipson), the Directors-General of both the Royal Naval and Army Medical Services, and the President of the Royal Society of Medicine (Sir Francis Champneys). Professor E. H. Starling, who proposed the toast to the chairman, referred to Dr. Edridge-Green's valuable and assiduous work in connexion with the subject of colour blindness, a work which still awaited adequate recognition. In acknowledging the toast, Dr. Edridge-Green mentioned that it was from Professor Starling himself that he had received much of the encouragement and support that he required at a time when he was in despair as to the progress of his crusade. In response to the toast to the services, Surgeon-General A. W. May, C.B., Director-General R.N., drew attention to the dearth of candidates for his department, and asked those in touch with newly qualified men to use their influence in obtaining for it recruits. The speeches during the evening were pleasantly interspersed with songs supplied by a number of professional singers.

THE Medico-Chirurgical Society of Bradford, which has now been fifty years in existence, duly celebrated its foundation by holding its annual dinner on the anniversary date, May 23th. There are now only two survivors of the original members, but both of these, Dr. David Goyder and Dr. Harry Meade, were able to be present. The former acknowledged the toast to the society, and gave some account of its earlier history; it had much scientific work standing to its credit, but was perhaps chiefly renowned, he said, in connexion with anthrax, a subject early associated with the name of one of the society's members, the late Dr. J. H. Bell, and at the present time with that of its existing President, Dr. F. W. Eurich. Dr. Goyder, who was for many years a representative of the Yorkshire Branch on the Central Council of the British Medical Association, and not long ago received the well-merited honour of being elected to the position of permanent Vice-President of the Yorkshire Branch of the Association, acted as Honorary Secretary of the Bradford Medico-Chirurgical Society for as long as twenty-five years; he became M.D.St.And. and L.R.C.S. in 1860, this being likewise the year in which Dr. Meade—also a member of the British Medical Association—became M.R.C.S., L.S.A. Both are on the staff of the Bradford Royal Infirmary, the former as consulting physician, the latter as consulting surgeon.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

A. W., who has employed male fern in the treatment of *Taenia solium* without success, after careful preparation of the patient, asks for further advice.

AMOEBIC HAEMATURIA.

W. (Transvaal) writes: During 1912 amoebic dysentery carried off an enormous number of Kaffir children. We have it every year, but never so bad in my seventeen years' experience of the Cape native territories. Usually, when the rains set in, dysentery becomes less frequent, and this year we had no proper rain till the summer was over. While the epidemic was at its height I saw two adult natives who had haematuria with some pain on micturition; though that is unusual, I expected to find bilharzia ova, and instead I found amoebae. The urine was strongly acid, like the faeces in dysentery. Has amoebic haematuria been noted elsewhere?

DOUBLE CHIN.

JUNO asks for advice in the treatment of a double chin in a young lady not otherwise obese.

*** We are advised that on general principles, unless the double chin is very unsightly, it is better to leave it alone. Gentle massage night and morning with soft grease and firm pressure with a bandage might be of some service, but the treatment should be carefully watched so that the tone of the parts is not diminished.

INCOME TAX.

E. M. H. asks what sums should be deducted in making his income-tax return (1) for the cost of purchase of a new motor car, and (2) the expense of having his old car (which he is still keeping) put in repair.

*** So long as "E. M. H." retains his old car for professional purposes the purchase of a second car is, strictly interpreted, an investment of further capital in his practice, and therefore no portion of the cost of the new car can properly be deducted. On the other hand, the amount spent on putting the old car in repair is a legitimate deduction in arriving at the "balance of profits and gains" of his practice.

ANSWERS.

J. F. C. W.—*A First German Course for Science Students*, comprising a reader and outline of grammar with diagrams and vocabulary, by H. G. Fiedler, Professor of German in the University of Birmingham, and F. E. Sandbach, Lecturer in German at the University of Birmingham (Alexander Moring, Limited, the De La More Press, 32, George Street, Hanover Square, London, W., 1906); or *German Grammar for Science Students*, by W. A. Osborne, M.B., D.Sc., Professor of Physiology and Histology in the University of Melbourne, and Ethel E. Osborne, M.Sc. (Whittaker and Co., 2, White Hart Street, Paternoster Square, London, E.C., 1906), would probably fulfil our correspondent's requirements as a guide in teaching himself to read scientific articles.

LETTERS, NOTES, ETC.

FRACTURE OF CERVICAL VERTEBRA BY MUSCULAR ACTION.

DR. A. A. ANGELIS (Walworth) sends us the following note with regard to the death of a young man found dead in a swimming bath: Although I attended immediately the body was discovered and made a careful examination of all the surroundings I could not find any marks of external violence or any signs indicating that the man struck the concrete of the bath. On *post-mortem* examination I found a fracture of the body and arch of the fourth vertebra (cervical), and on giving evidence at the inquest I expressed the opinion that in the absence of any other cause to account for the broken neck the only explanation, although very uncommon, might be a sudden retraction of the head to avert collision with the bottom on jumping into the water. Such cases are recorded in South's edition of Chelius's *Surgery*.

TREATMENT OF WHOOPING-COUGH.

M.R.C.S., who in the JOURNAL of October 19th, 1912, recommended potassium bicarbonate in the treatment of whooping-cough, informs us that he has received a letter from a reader who then tried the method stating that it proved beneficial in the case of his own daughter.

SCARCITY OF SHIP SURGEONS.

PEGASUS writes: In addition to the reasons mentioned by "Late Ship Surgeon" as a cause of the difficulty steamship companies experience in obtaining suitable surgeons, perhaps the enclosed letter, which was handed to me on joining the ship, may furnish additional explanation. My feelings on receipt of it were to leave the ship forthwith. I have acted as ship surgeon on various lines, but never previously received such an insulting letter from the owners.

*** The letter, which is addressed "The Doctor, S.S. ———, London," is couched in the following terms—the italics are in the original letter:

"Dear Sir,

"You are employed on board this steamer as medical adviser to the crew and passengers from the time she *leaves here until her return to this port.*

"Your specific duty, among others, is to give all possible *professional attention* to the crew as well as passengers, so please see this is done. Should the Master find it necessary to report neglect on your part in this respect, we shall have to treat the matter seriously and in a form that will be as disagreeable to you as to ourselves.

"Yours faithfully,
"—— ——."

MASONIC RECEPTION AT BRIGHTON.

DR. C. H. BENHAM, J.W., 1466 (14, North Street, Brighton), writes: May I, as one of the Wardens of the Hova Ecclesia Lodge, take the liberty of correcting the paragraph on p. 1231 of your issue of June 7th? This paragraph was written by one who is not a member of the craft, and the invitation should be worded as follows: "The Worshipful Master and Wardens of the Hova Ecclesia Lodge, No. 1466, extend a cordial invitation," etc. May I take this opportunity of reminding all Brethren who intend to be present that an early reply will greatly lighten the labours of those who are arranging for this reception? This may be sent to me at the address which appears above. We hope to have a hearty response.

STATUES OF JENNER.

DR. CLIPPINGDALE (London) writes: In the article in last week's JOURNAL dealing with the excursions at the forthcoming meeting at Brighton it is stated (p. 1231) that the statue of Jenner at Boulogne is, "by the irony of fate, the only one in the world." Things are not as bad as this. The Japanese, who are devoted admirers of Jenner, have erected a statue to his memory at Tokio; there is another statue in Berlin, another in Brünn (Austria), another in Gloucester Cathedral, and another in Kensington Gardens. The statue in Kensington Gardens afforded an illustration of the prophet being without honour in his own country during the Jenner celebrations a few years ago. Having read in the paper that on a certain day the Medical Faculty in Berlin would proceed to the Jenner statue in that city and lay upon it a wreath of laurel, I went to Kensington Gardens to see if the statue there was similarly honoured. I found, however, only a group of children playing near it, eating oranges and depositing upon the pedestal bits of discarded orange peel.

A DISCLAIMER.

DR. HUGH T. ASHBY (Manchester) writes: An article appeared in a local daily paper on June 2nd on Child Welfare and Adenoids with my name attached to it. May I be allowed to make it quite clear that the article was not written by me and that my name was put in quite unauthorized?

STANDARD OF PRELIMINARY EXAMINATIONS: A CORRECTION.

SIR HENRY MORRIS has drawn our attention to a printer's error in his article on the General Medical Council and the proposed alteration in the standard of preliminary examinations (BRITISH MEDICAL JOURNAL, June 7th, p. 1217). Line 12 of the article should read: "average yearly number of the five preceding years," and not as printed.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.